data SHEET

EIPE Skorpion PoE Mid-Span Injector & Splitter

Power over Ethernet (PoE) equipment adds power to the data in Ethernet wiring — so that devices such as surveillance and card access machines can be powered via standard Ethernet cabling.

PoE Mid-span Injector

PoE applications require a 48 VDC power source, but most automation systems run from 24 VAC/VDC power. If only one Ethernet-powered device (PD) needs power, the EIPE-1 can provide it. Typically the injector is inserted mid-span between a standard Ethernet switch and the PD. The EIPE-1 operates from 24 VAC/VDC to produce the required 48 VDC which it injects into the Ethernet cable to provide power and data to the PD.

- Fully powers one Powered Device (PD)
- 24 VAC/VDC power input
- Isolated 15.4 W power output

PoE Mid-span Splitter

Under certain circumstances a non-PoE compliant device can work with the use of the EIPE-2 splitter. If the end device is 10/100 Mbps Ethernet-based but requires 24 VDC to operate, the splitter will accept the combined 48 VDC and data from a power sourcing equipment (PSE) and then generate 24 VDC to provide the end device with separate data and power.

- 48 VDC power input
- 24 VDC, 10 W power output

Both Models

- IEEE 802.af compliant
- Enhanced EMC compliance
- 10BASE-T/100BASE-TX
- DIN-rail mounting
- Rugged metal enclosure
- Diagnostic LEDs
- CE mark, UL 508 listed, c-UL

EIPE-1 Injector

EIPE-2 Splitter

CTRLink®

Overview

Each mid-span model has two RJ-45 connectors. The upper connector attaches to the upstream device. The lower one attaches to the end device. Transmit and receive signals pass between the two connectors as if the mid-span device were not present.

Both mid-span models support the 802.3af protocol. Each has a rugged metal enclosure and metal DIN-rail clip for control panel mounting.

The **EIPE-1 Injector** is powered from a 24 VAC/VDC source — eliminating the need and expense of the 48 VDC power supply typically associated with PoE equipment. In many industrial control systems 24 VDC is readily available in the control panel, just like 24 VAC is available in a BAS system. Using its received power, the EIPE-1 internally generates the 48 VDC PoE power for the Powered Device (PD) — eliminating grounded primary power concerns.

With the EIPE-1 powered up, an Ethernet cable is attached to the PD. No power is delivered to the PD until a valid 25 kΩ resistance, called the *signature*, is sensed by the EIPE-1. Once this value is sensed, the EIPE-1 applies power to the unused pairs and thereby powers the PD. Even if the total cable length is 100 m, the PD receives a minimum of 12.95 watts at its power pins.

The **EIPE-2 Splitter** is powered by 48 VDC which it uses to internally generate the 24 VDC power for the non-PoE device and eliminate any concerns about grounded primary power. The maximum output power is 10 watts.

Power Input
24 VDC 21 W or 24 VAC 38 VA half-wave regulated design allows power sharing with other half-wave devices

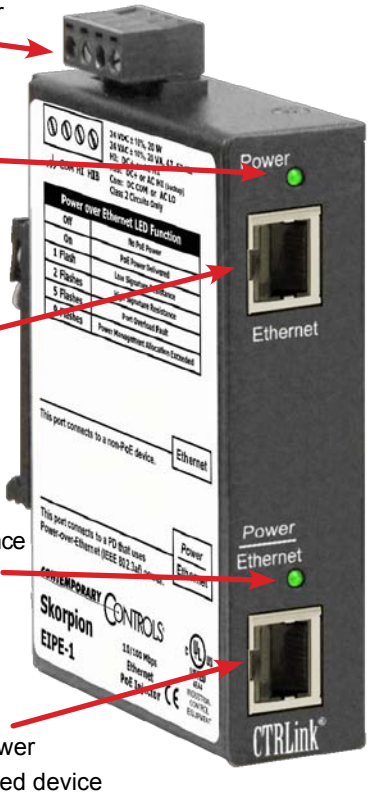
Input Power LED
Input Power OK indicator

Ethernet
10/100 Mbps Ethernet received from a non-PoE Ethernet switch

PoE LED
1 flash = low signature resistance
2 flashes = high signature resistance
5 flashes = excessive current
Green = power being supplied

PoE Port
10/100 Mbps + power delivered to powered device

Injector



Splitter

Power Output
24 VDC 10 W orange colour indicates it delivers power to the non-PoE end device

Input Power LED
Input Power OK indicator

PoE Port
10/100 Mbps + power received from powered device

Power Sourcing Equipment Output Power LED
Indicates that 24 VDC is being supplied to the power connector

Ethernet
10/100 Mbps Ethernet delivered to a non-PoE Ethernet device

Specifications

Power Requirements

EIPE-1: 24 VDC ±10% 21 W or 24 VAC ±10% 38 VA 47–63 Hz
EIPE-2 input power: 48 VDC±10% 12.95 W (via the RJ-45 port)
EIPE-2 output power: 24 VDC±10% 10W minimum

Operating Temperature

0°C to 60°C

Storage Temperature

–40°C to 85°C

Relative Humidity

10–95%, non-condensing

Protection

IP30

Ethernet Communications

IEEE 802.3 10/100 Mbps data rate
10BASE-T, 100BASE-TX physical layer
100 m (max) CAT5 cable length total for both cables

LEDs (EIPE-1)

Power	Green = power OK
Power over Ethernet	Green = power being delivered
Flashing:	1 = low signature resistance 2 = high signature resistance 5 = excessive current Off = no power being delivered

LEDs (EIPE-2)

48V IN	Green = acceptable input power applied
24V OUT	Green = acceptable output power available

Regulatory Compliance

CE Mark; CFR 47, Part 15 Class A; RoHS; UL 508; c-UL 508

EIPE-1 Power Pins

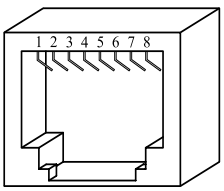
24 VDC ± 10%, 21 W
24 VAC ± 10%, 38 VA, 47–63 Hz
HI: DC+ or AC HI
HIB: DC+ or AC HI (backup)
Com: DC COM or AC LO
Class 2 Circuits Only

EIPE-2 Power Pins

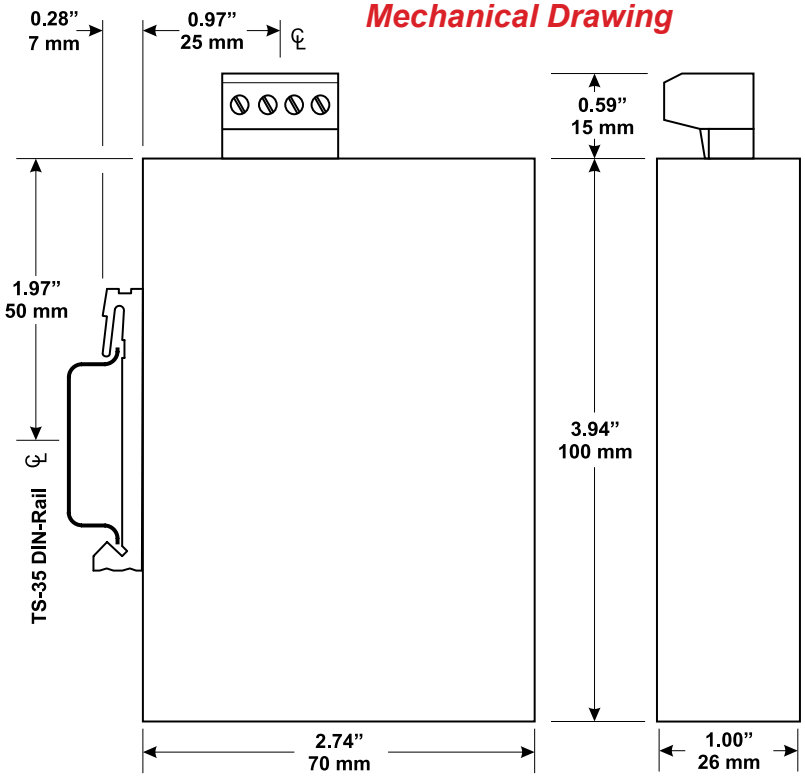
Power Output
24 VDC ± 10%, 10 W (minimum)
HI: DC+
Com: DC COM

RJ-45 Connector Pin Assignments

Non-PoE Ports		PoE Ports	
Pin	Function	Pin	Function
1	TD+	1	TD+
2	TD–	2	TD–
3	RD+	3	RD+
4	N/C	4	+ 48 VDC
5	N/C	5	+ 48 VDC
6	RD–	6	RD–
7	N/C	7	48 VDC return
8	N/C	8	48 VDC return

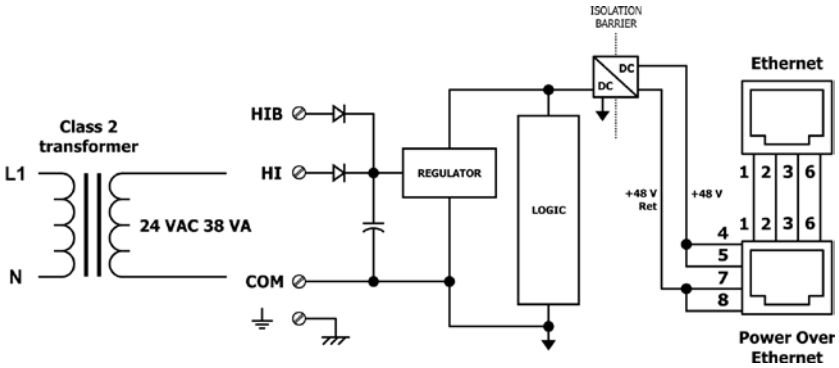


Mechanical Drawing

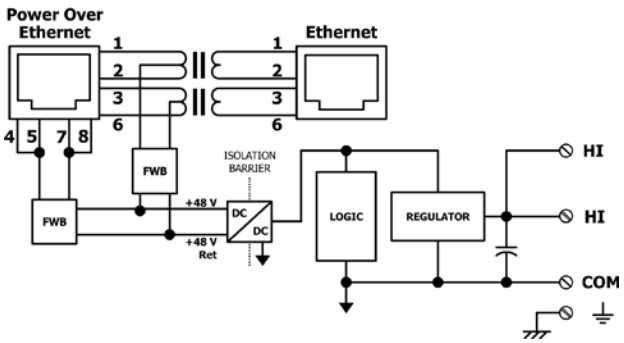


Injector Power Input and Output Circuitry

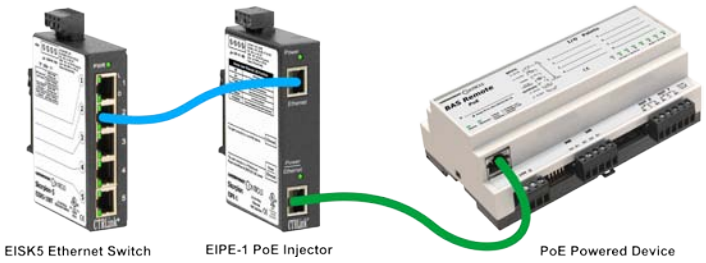
Injector

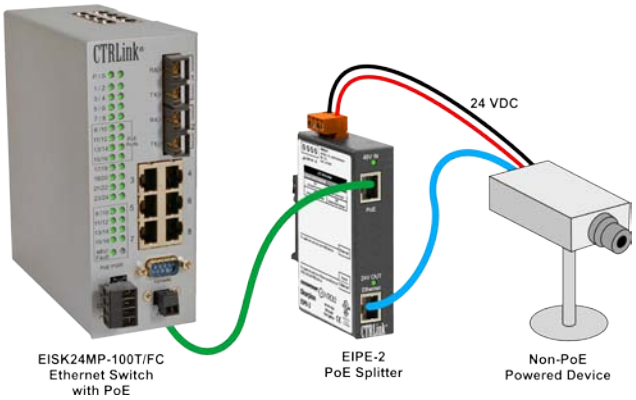


Splitter



Typical PoE Installations





Ordering Information

Model	*RoHS*	*Description*
EIPE-1	✔	Skorpion PoE Mid-Span Power Injector
EIPE-2	✔	Skorpion PoE Mid-Span Power Splitter

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