

EISB B-Line Series

16- or 24-port Switching Hubs



- Extended temperature range (–40°C to +75°C)
- Consistent panel space for 16 or 24 ports
- 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, duplex, and flow control on twisted-pair ports
- Auto-MDIX 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.
- 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 and power
- 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
- CE Mark
- RoHS compliant

PRODUCT OVERVIEW

The EISB B-Line Series is designed with high port density for the space consumed. With a constant form factor requiring only 44.5 mm of DIN-rail space, these switches can support 16 or 24 ports with twisted-pair and fibre/twisted-pair combinations in a rugged metal enclosure.

Each unit segments the Ethernet LAN into multiple collision domains, acting as a “bridge” between data links to create a larger network diameter than possible with repeating hubs. Each port automatically negotiates data rate, duplex, and flow control.

The switch learns port assignments by reading Ethernet frames and logging source addresses into a table which can hold over 4,000 addresses. 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 of frames is implemented using 256 kB of built-in memory.

Only standard straight-through cables are needed to connect the twisted-pair ports to stations or another hub since the twisted-pair ports on these switches are Auto-MDIX compliant. In addition to one power LED, each port has an LED showing link/activity/data rate by colour: green for 100 Mbps and yellow for 10 Mbps. Flashing indicates port activity.

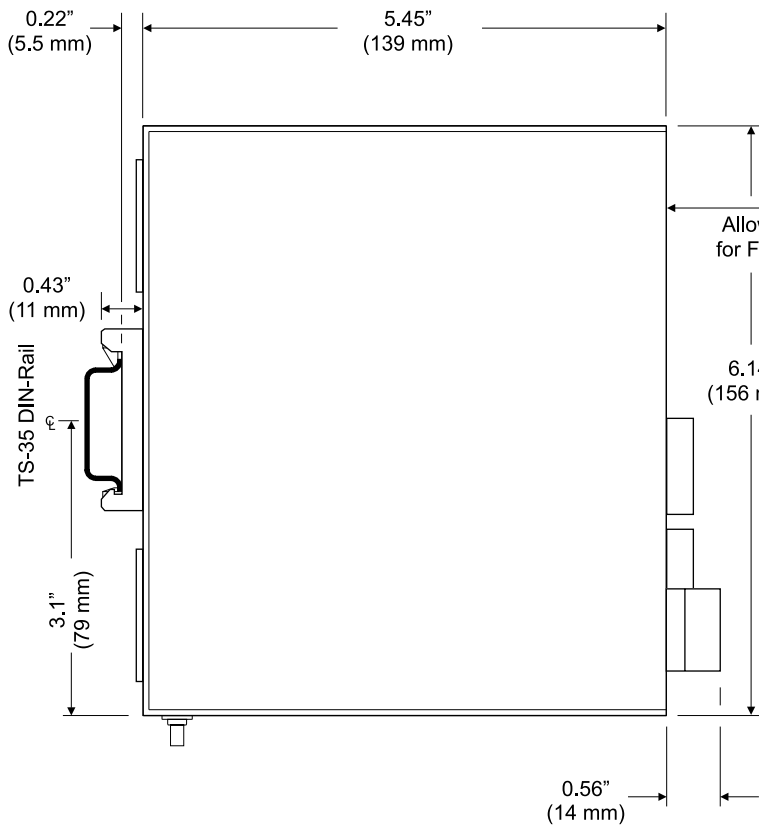
Each unit accepts wide-range, low-voltage AC or DC power and redundant power can be connected.

The unit is shipped with a DIN-rail clip installed.

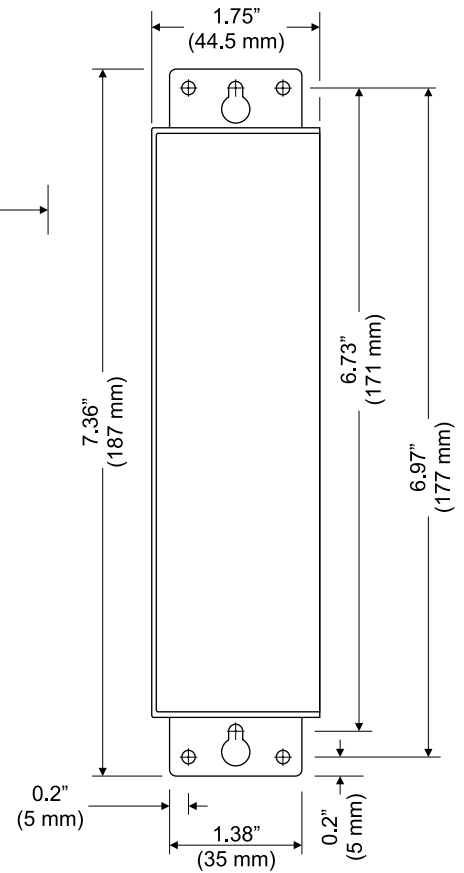
If direct mounting to a sub-panel is desired, an optional panel mounting bracket, shipped with the product, can be installed after removing the DIN-rail clip.

EISB B-Line Series

Mechanical

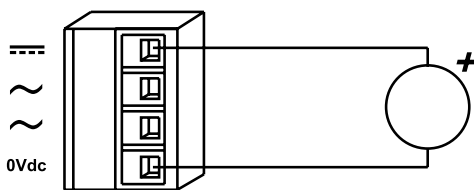


Side View showing DIN-rail Clip
(Mounting Brackets Retracted)

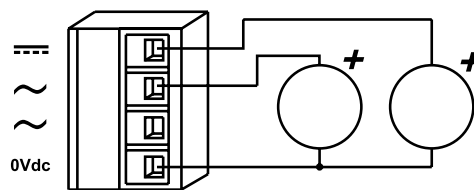


Front View with
Mounting Brackets Extended

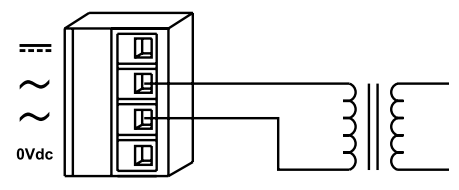
Power Diagrams



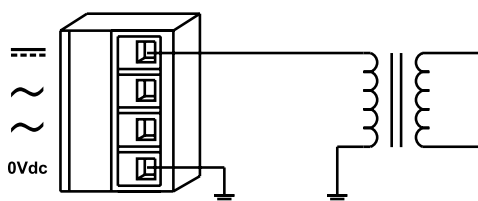
DC Powered



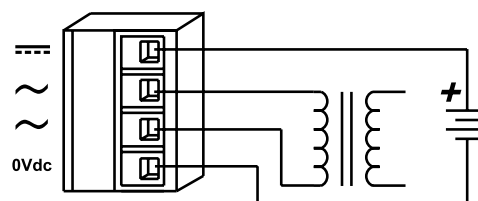
Redundant DC Powered



AC Powered



AC Powered (grounded secondary)



AC Powered with Battery Backup

EISB B-Line Series

Specifications

| Electrical | DC | AC |
|-----------------|--------------------------------|---------------------------------|
| Input voltage | 10–36 Volts | 8–24 Volts |
| Input power | 10 W (EISB16-100T) | 10 VA (EISB16-100T) |
| | 20 W (EISB16-100T/FT, FC, FCS) | 20 VA (EISB16-100T/FT, FC, FCS) |
| | 10 W (EISB24-100T) | 10 VA (EISB24-100T) |
| | 20 W (EISB24-100T/FT, FC, FCS) | 20 VA (EISB24-100T/FT, FC, FCS) |
| Input frequency | N/A | 47–63 Hz |

Environmental

| | |
|-----------------------|-----------------------|
| Operating temperature | –40°C to +75°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 | 16, 24 or 14, 22 | 0 or 2 |
| Interface | 10BASE-T/100BASE-TX | 100BASE-FX |
| | 10/100 Mbps | 100 Mbps |
| | Auto-negotiated data rate, flow control, full- or half-duplex mode and | Full-duplex |
| | Auto-MDIX cable connection | |
| Connectors | Shielded RJ-45 | SC (on multimode 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 signal indicators | Link LED: | Green — 100 Mbps link |
| | Yellow — 10 Mbps | Flashing — Activity |
| | Green — 100 Mbps | |
| | Green Flashing — Activity | |
| LED power indicator | Green | |
| Flow control | Half-duplex (backpressure) | Full-duplex (PAUSE) |
| Aging | 300 seconds typical | |

RJ-45 Pin Assignments

MDI-X¹ 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 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 | 4 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**Copper Only**

| Model | Description |
|-------------|---|
| EISB16-100T | Sixteen-port 10BASE-T/100BASE-TX switch |
| EISB24-100T | Twenty-four port 10BASE-T/100BASE-TX switch |

Fibre and Copper

| | |
|-----------------|--|
| EISB16-100T/FC | Fourteen-port 100BASE-TX/two-port 100BASE-FX (multimode) switch, SC connectors |
| EISB16-100T/FT | Fourteen-port 100BASE-TX/two-port 100BASE-FX (multimode) switch, ST connectors |
| EISB16-100T/FCS | Fourteen-port 100BASE-TX/two-port 100BASE-FX (single-mode) switch, SC connectors |
| EISB24-100T/FC | Twenty-two port 100BASE-TX/two-port 100BASE-FX (multimode) switch, SC connectors |
| EISB24-100T/FT | Twenty-two port 100BASE-TX/two-port 100BASE-FX (multimode) switch, ST connectors |
| EISB24-100T/FCS | Twenty-two 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/24V AC output (nominal values) |
| AI-XFMR-E | Wall-mount plug-in transformer 230 VAC input/24 VAC output (nominal values) |

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