

IE-Giga-MiniMc

USER MANUAL



B+B SMARTWORX

Powered by

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FCC RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

ABOUT THIS MANUAL

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ABOUT THE IE-GIGA-MINIMC

The IE-Giga-MiniMc provides a single conversion between 10/100/1000 Base-T twisted pair and 1000 Base-SX/FX fiber. This device auto negotiates speed and duplex on the copper port and the fiber is 100Mbps, FDX. The IE-Giga-MiniMc supports jumbo frames up to 1632 MTU.

The IE represents the unit's use as an Industrial Ethernet device, which allows for extended temperature operation of -25°C to +85°C for DC power and -10°C to +50°C when using the included AC adapter.

The IE-Giga-MiniMc, a fixed fiber transceiver model, includes one 10/100/1000 Mbps RJ-45 connector and one 1000 Mbps SC fiber connector which can support single-mode fiber or multi-mode fiber in dual strand or single strand fiber.

The IE-Giga-MiniMc can use either the included B+B SmartWorx universal, external power adapter with 100 to 240 \pm 10% VAC input or can be wired directly to the 7-50 VDC terminal block (for extended temperature configuration). There is an optional IE-PowerTray/18 whereby up to 18 IE-Giga-MiniMcs can be installed.

INSTALLING THE IE-GIGA-MINIMC

The IE-Giga-MiniMc installs virtually anywhere as a standalone device in locations with extremely limited space. Installation options include:

- Velcro strips
- DIN rail mounting with DIN rail clips
- Wall mount bracket
- IE-PowerTray/18 for high density applications

NOTE: Installation Tip

Several models of the IE-Giga-MiniMc support single-strand fiber for operation. Since single-strand fiber products use fiber optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs.

NOTE: Some options require items that are sold separately, available from B+B SmartWorx.

HARDWARE MOUNTING

The IE-Giga-MiniMc can be mounted on a DIN rail or using wall mount brackets (shown below).



DIN rail clips (part number# 806-39105) and wall mount brackets (part number# 895-39229) are available for purchase from B+B SmartWorx.

The DIN rail clips include screws to allow the installation onto a DIN rail. Install the screws into DIN rail clips, which should be mounted parallel or perpendicular to the DIN rail. Snap the converter onto the clips. To remove the converter from the DIN rail, use a flat-head screwdriver inserted into the slot to gently pry the converter from the rail.



NOTE: The DIN clips are designed for use on a DIN-35 rail.

POWERING THE IE-GIGA-MINIMC

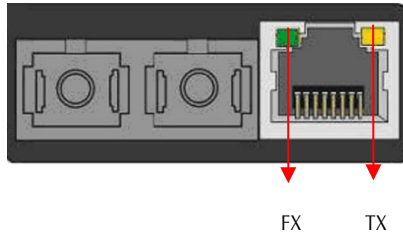
The IE-Giga-MiniMc supports multiple powering options:

- Country-specific AC power adapter (included)
- 4-terminal DC power block
- IE-PowerTray/18
- Dual USB cable
- IE-Power/5V DIN rail mount power supply

NOTE: Some options require items that are sold separately, available from B+B SmartWorx.

LED OPERATION

Each IE-Giga-MiniMc converter includes two LEDs, located on the RJ-45 connector. LED functions are as follows:

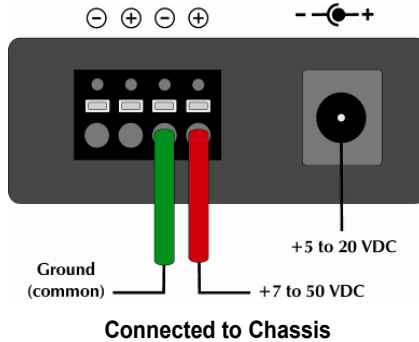


LED functions are as follows (above illustration is representative):

FX LNK/ACT	Glows green when a link is established on the fiber port; blinks green when activity is detected on the fiber port.
TX LNK/ACT	Glows amber when a link is established on the copper port; blinks amber when activity is detected on the copper port.

DC TERMINAL BLOCK WIRING INSTRUCTIONS

The IE-Giga-MiniMc can be powered via the DC terminal block. From a power source, connect to any one positive and any one negative terminal on IE-Giga-MiniMc.



NOTE: When using stranded wire, the leads must be tinned and equivalent to a 16 AWG solid conductor. The DC terminal block is protected against mis-wiring. If the unit is mis-wired, positive power lead to the negative terminal and negative power lead to the positive terminal, it will not function. When powering a unit with voltages near the upper limit of the device's specification (for example: 48 Volts) take precautions to limit the voltage at the units terminal block. When turning on high voltage DC circuits, initial voltages may momentarily exceed the unit's specification.

CASCADING POWER

When installing multiple IE-Giga-MiniMc units on a DIN rail, connect to one DC input source and then cascade from one DC block to the next, until reaching the maximum electrical current available.



DC POWER SUPPLY PRECAUTIONS

The following precautions should be observed when installing chassis with DC power supplies.

1. Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.
2. When installing 7 to 50 rated equipment, it must be installed only per the following conditions:
 - a. Connect the equipment to a 7 to 50VDC supply source that is electrically isolated from the alternating current source. The 7 to 50 VDC source must be connected to a 7 to 50 VDC SELV source.
 - b. The maximum terminal voltage is 50 VDC.
 - c. Input wiring to terminal block must be routed and secured in such a manner that it is protected from damage and stress. Do not route wiring past sharp edges or moving parts.
 - d. A readily accessible disconnect device, with a 3mm minimum contact gap, shall be incorporated in the fixed wiring.
3. Grounding: reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit. The Negative Terminal is common to the grounded case.

SPECIFICATIONS

Ethernet Connections

- 10/100/1000 BaseT
- Auto Negotiation
- Auto Cross
- Flow Control
- 1632 MTU
- Full Line-Rate Forwarding

DC Input Voltage

7 to 50 VDC on DC terminal block

5 VDC on DC jack

AC Wall Adapter

100 to 240 \pm 10% VAC input, 5 VDC output, 2 A max.

Power Tray 18-Slot AC for Miniature Converters (option)

125W, 20A@5V

Operating Temperature

-25 to +85 °C (-13 to +185 °F) DC terminal block

-10 to +50 °C (+14 to +122 °F) with supplied AC wall adapter

Storage Temperature

-40 to +85 °C (-40 to +185 °F)

Humidity

5 to 95% (non-condensing); 0 to 10000 ft. altitude

Power Consumption

600 mA @ 5 VDC

Dimensions

2.11H x 4.57W x 8.51D cm (0.83H x 1.80W x 3.35D inches)

FIBER OPTIC CLEANING GUIDELINES

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at B+B SmartWorx to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

ELECTROSTATIC DISCHARGE PRECAUTIONS

Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand-alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products.

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the modules or stand-alone units over any surface.



WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

CERTIFICATIONS

UL/cUL:

Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

NEMA TS2: Select models (see datasheet)

CE – Directives

2014/30/EU – Electromagnetic Compatibility Directive

2011/65/EU – Reduction of Hazardous Substances Directive (RoHS)

2012/19/EU – Waste Electrical and Electronic Equipment (WEEE)

2014/35/EU – Low Voltage Directive

CE - Standards

EMC:

EN 55032: Class B – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements

EN 55024 – Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement

EN 61000-3-2 –Emissions: Harmonic Currents Injected into the AC Mains

EN 61000-3-3 – Emissions: Voltage Fluctuations/Flicker Impressed on AC Mains

Safety:

EN 60950-1 +A11 +A1 +A12 +A2



**Class 1 Laser product, Luokan 1 Laserlaite,
Laser Klasse 1, Appareil A' Laser de Classe 1**

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.

