

IE-MiniMc

USER MANUAL



B+B SMARTWORX

Powered by

ADVANTECH

Advantech B+B SmartWorx - Americas

707 Dayton Road

Ottawa, IL 61350 USA

Phone 1 (815) 433-5100

Fax 1 (815) 433-5105

Advantech B+B SmartWorx - Europe

Westlink Commercial Park

Oranmore, Co. Galway, Ireland

Phone +353 91-792444

Fax +353 91-792445

www.advantech-bb.com

support@advantech-bb.com

CONTENTS

About the IE-MiniMc.....

4

Hardware Installation.....

4

Wall Mount.....

4

DIN Rail Mount

5

Powering Options

6

Power Over Ethernet (PoE)

6

DC Terminal Block Wiring.....

6

Cascading DC Power

6

LEDS

7

Specifications.....

8

B+B SmartWorx Technical Support.....

9

Statements, Guidelines, Precautions, REgulatory.....

9

FCC Radio Frequency Interference Statement.....

9

Fiber Optic Cleaning Guidelines.....

10

Electrostatic Discharge Precautions.....

11

Laser (Fiber Optic Transmitter) Warning.....

11

Regulatory, Directives, Standards.....

12

ABOUT THE IE-MINIMC

The IE-MiniMc industrial Ethernet media converter features 10/100 switching copper-to-fiber conversion. Miniature in size, it offers plug-and-play operation, and supports an extended voltage range as well as extended operating temperature. The media converter can function as a PD device, and is compliant to the IEEE 802.3af Power-over-Ethernet (PoE) standard.

Available in a variety of single-mode and multi-mode fiber types, it supports an MTU of 1916 bytes. Several mounting options and powering options are available and detailed in the following sections of the manual.

HARDWARE INSTALLATION

The IE-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
- PowerTray/18 for high density applications

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

WALL MOUNT



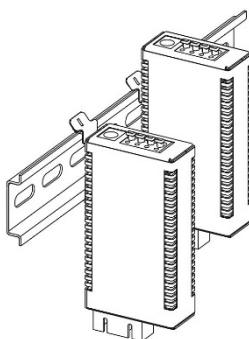
NOTE: Wall mount brackets (part number 895-39229) are available for purchase from B+B SmartWorx.

DIN RAIL MOUNT

NOTE: DIN rail clips (part number 806-39105) are available for purchase from B+B SmartWorx.

The DIN Rail clips include screw, to allow the installation on a DIN rail.

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



POWERING OPTIONS

The IE-MiniMc supports multiple powering options:

- Country-specific, high-reliability AC power adapter (included)
- IEEE 802.3af Power-over-Ethernet (PoE) standard; draws power from power sourcing equipment (NON-Telco version only).
- 4-terminal DC power block
- IE-PowerTray/18 for rack mounting

POWER OVER ETHERNET (POE)

Power-over-Ethernet (PoE) technology allows the IE-MiniMc to be a Powered Draw device (PD) and draw power when connected to Power Sourcing Equipment (PSE). Power Sourcing Equipment distributes an electrical current across existing copper data cabling.

DC TERMINAL BLOCK WIRING

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

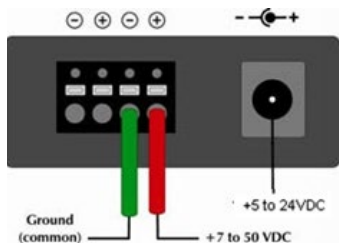


Figure 3. DC Terminal Block

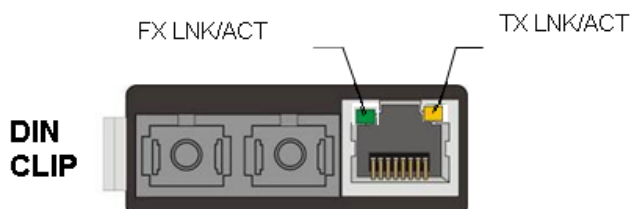
NOTE: When using stranded wire, the leads must be tinned and equivalent to a 16 AWG solid conductor. The DC terminal block is protected against mis-wiring. If the unit is mis-wired, positive power lead to the negative terminal and negative power lead to the positive terminal, it will not function. When powering a unit with voltages near the upper limit of the device's specification (for example: 50 Volts) take precautions to limit the voltage at the unit's terminal block. When turning on high voltage DC circuits, initial voltages may exceed the maximum allowed duration of the unit's transient protection devices.

CASCADING DC POWER

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

LEDS

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



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.

LED Indicators	One Green LED
Copper RJ-45 port LNK/ACT	Color = GREEN Blink = GREEN when data is passing Off = NO COLOR
Fiber Port LNK/ACT	Color = AMBER Blink = AMBER when data is passing Off = NO COLOR

SPECIFICATIONS

Connectors	
Copper	RJ-45
Fiber	ST, SC
Environmental - Intended for indoor and outdoor use.	
Operating Temperature	-40 to +85 °C (-40 to +185 °F) - DC configuration -10 to +50 °C (+14 to +122 °F) - with AC wall adapter
Storage Temperature	-40 to +85 °C (-40 to +185 °F)
Operating Humidity	5 to 95% (non-condensing); 0 to 10000 ft. altitude
Power Input	
DC Terminal Block	7 to 50 VDC, 1 to 0.1 A
DC Jack	5 to 24 VDC
PoE	When IE-MiniMc uses PoE technology to be a PD, the maximum supply voltage is 50V.

B+B SMARTWORX TECHNICAL SUPPORT

USA/Canada: 1 (800) 346-3119 (Ottawa IL USA)

Europe: +353 91 792444 (Ireland / Europe)

Email: support@advantech-bb.com

Web: www.advantech-bb.com

STATEMENTS, GUIDELINES, PRECAUTIONS, REGULATORY**FCC RADIO FREQUENCY INTERFERENCE STATEMENT**

This equipment has been tested and found to comply with the limits for a Class A 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 A 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 A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

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 the factory 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 your add-in modules. Always observe the following precautions when installing or handling an add-in module or any board assembly.

1. Do not remove unit from its protective packaging until you're ready to install it.
2. Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold boards by the edges only; 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 board 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.

LASER (FIBER OPTIC TRANSMITTER) WARNING

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

REGULATORY, DIRECTIVES, STANDARDS

FCC	FCC Class A (using DC terminal or PoE power) FCC Class B (using any DC jack, optional) UL/cUL, CSA
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)
CE – Standards	EMC: EN 55032 Class A – Electromagnetic Compatibility of Multimedia Equipment -- Emission Requirements EN 55024 +A1 – Information Technology Equipment - Immunity Characteristics - Limits and Methods of Measurement EN 61000-6-3 Class A – Generic Emission Standard for Residential, Commercial and Light-industrial Environments

© 2019 B+B SmartWorx – powered by Advantech. All rights reserved. The information in this document is subject to change without notice. B+B SmartWorx assumes no responsibility for any errors that may appear in this document. IE-MiniMc is a trademark of B+B SmartWorx. Other brands or product names may be trademarks and are the property of their respective companies.

Documentation Number: IE-MiniMc_1019m