PoE Giga-McBasic
PoE+ Giga-McBasic
with LFPT

Operation Manual

B&B ELECTRONICS

PoE Giga-McBasic LFPT & PoE+ Giga McBasic LFPT

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INTRODUCTION PoE GIGA-McBASIC

ABOUT THE PoE GIGA-McBASIC LFPT

The PoE Giga-McBasic is a solution for private network applications that require power over Ethernet for installations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, one PSE 10/100/1000Base-T copper port that provides Power-over-Ethernet (PoE) (IEEE802.3af), and one 10/100/ 1000Mbps copper port, to connect a non-PoE unit to the same fiber uplink. As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE Giga-McBasic LFPT provides up to 15.4 watts on one copper port, and is powered by an internal power supply, supporting 100-240 VAC. For more robust power requirements on both copper ports, refer to the information about the PoE+ Giga-McBasic LFPT.

NOTE
Unless noted otherwise, any reference is applicable for both the 1x9 and SFP version of the *PoE Giga-McBasic LFPT* in this manual.

The PoE Giga-McBasic LFPT is a solution for private network applications that require power over Ethernet for locations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, one PSE 10/100/1000Base-T copper port that provides PoE (IEEE802.3af), and one 10/100/1000Mbps copper port. As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE Giga-McBasic LFPT provisions up to 15.4 watts on one copper port, and can be powered by an external AC adapter or DC terminal block. For more robust power requirements on both copper ports, please refer to the information about the PoE+ Giga-McBasic LFPT.

The SFP uplink can support fiber or copper SFPs. The fiber SFP, available in SC or LC connectors, supports 100FDX or 1000FDX; a copper SFP supports the SGMII interface (10/100/1000Mbps). The SFP, with or without DDMI, is available for purchase through B&B Electronics Distributors. The SFP must be MSA-compliant.

The copper ports auto negotiate to the connected device's speed and duplex mode: 10 Mbps, 100 Mbps or 1000 Mbps, and HDX or FDX (including Flow Control). The

PoE+ Giga-McBasic LFPT supports jumbo frames up to 10240.

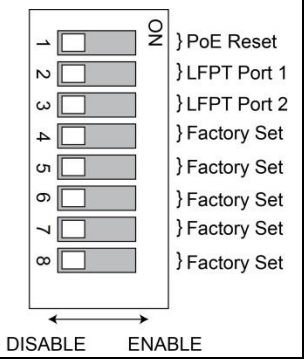
INSTALLATION

PoE Giga-McBasic LFPT installs virtually anywhere: as a standalone, table-top device, with rackmount ears,or using a Wallmount bracket. The rackmount ears and wallmount bracket are optional accessories available through B&B Electronics distributors.

Installation Tip

Several models of the PoE Giga-McBasic LFPT support single-strand fiber for operation. Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs. For example, connect a PoE Giga-McBasic LFPT , TX/SSLX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. PoE Giga-McBasic LFPT, TX/SSLX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20km] or both are single/PLUS [40km]).

DIP SWITCH CONFIGURATION FOR PoE GIGA-McBASIC LFPT SFP & 1X9

DIP Switch	Name	Description	Default Setting	DIP Switch
1	PoE Reset	ON forces Port 2, PSE/PoE, to OFF on LOS of Fiber input	OFF	
2	LFPT Port 1	ON enables LFPT for Port 1 and the FX Port	OFF	
3	LFPT Port 2	ON enables LFPT for Port 2 and the FX Port	OFF	
4	Factory Set	Do not change	OFF	
5	Factory Set	Do not change	OFF	
6	Factory Set	Do not change	OFF	
7	Factory Set	Do not change	OFF	
8	Factory Set	Do not change	OFF	

POE RESET DSW

When set to ON, it will force the PSE output power on the copper port OFF when the LINK state is lost on the SFP line (copper or fiber SFP). By default, the DSW is set to OFF.

LFPT DSW FOR PoE GIGA-McBASIC LFPT

The DIP Switches for LFPT is to allow a LOS fault to be passed through the unit. When enabled, if link is lost on the FX port, the transmit on the TX port is disabled. If link is lost on a TX port, the transmit on the FX Port is disabled.

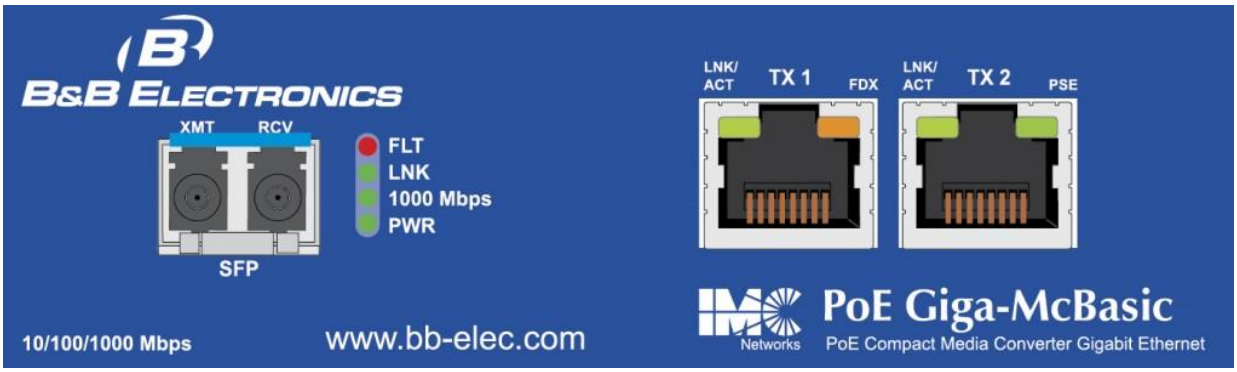
NOTE

With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loss link, the loss of TX Port 1 link causes the FX Port to disable transmit.

LED OPERATION FOR PoE GIGA-McBASIC LFPT SFP AND 1X9

The PoE Giga-McBasic LFPT includes LEDs for three ports, as shown below:

PoE Giga-McBasic LFPT SFP



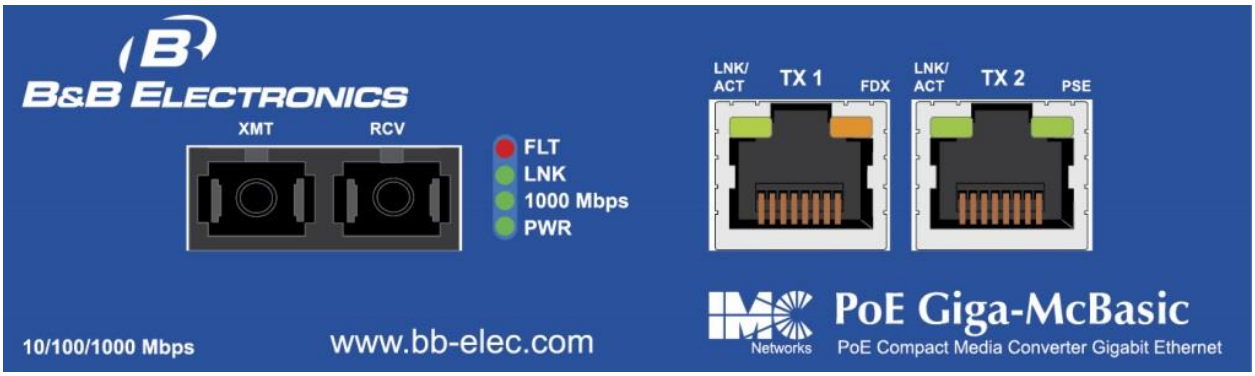
SFP LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when SFP is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power
FDX (TX1)	Glows amber when port is running full duplex

PoE Giga-McBasic LFPT 1x9



1x9 LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power
FDX (TX1)	Glows amber when port is running full duplex

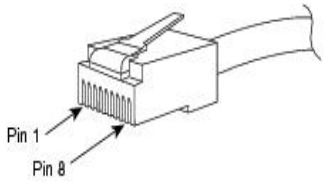
NOTE
The fixed twisted pair port labeled PSE is the only port capable of providing PoE.

TROUBLESHOOTING

- PWR LED glows green when the unit is powered. If this LED is not lit, contact B&B Electronics Technical Support.
- Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature. The PSE LED should maintain solid green, to indicate consistent power. Check the PD device and its requirements.

RJ-45 PINOUTS

The following table lists the pin configuration for the RJ-48 connector.



Pin#	Signal Name 1000M	Signal Direction 10/100M	PoE & PoE+ (ALT-B)
1	TXD1+	Out*	
2	TXD1-	Out*	
3	RXD2+	IN*	
4	D3+		+V
5	D3-		+V
6	RXD2-	IN*	
7	D4+		-V
8	D4-		-V

SPECIFICATIONS FOR THE PoE GIGA-McBASIC LFPT

Ethernet Connections

- 10/100/1000 BaseT
- Auto Negotiation
- AutoCross
- Flow Control
- 10240 MTU
- Full Line-Rate Forwarding

Input Specifications

100 to 240 ±10% VAC input, 50/60 Hz, 0.5A to 0.2A

Operating Temperature

+32°F to +122°F (0°C to +50°C)

Storage Temperature

-40°F to +185°F (-40°C to +85°C)

Humidity

5% to 95% (non-condensing); 0 to 10,000 ft. altitude

Dimensions

1.46” H x 4.76” W x 7.32” D (3.71 x 12.09 X 18.59 cm)

Power Characteristics

Consumes less than 10 watts (heating) plus PSE power

IEEE802.3af Power to field < 15.5 watts

Standards Compliance

- IEEE 802.3af Power Over Ethernet
- IEEE 802.3 Ethernet Standards
- IEEE 802.3u Auto-Negotiation
- RFC-2474
- RFC-2475 DiffServ QoS

INTRODUCTION PoE+ GIGA-McBASIC LFPT

ABOUT THE PoE+ GIGA-McBASIC LFPT

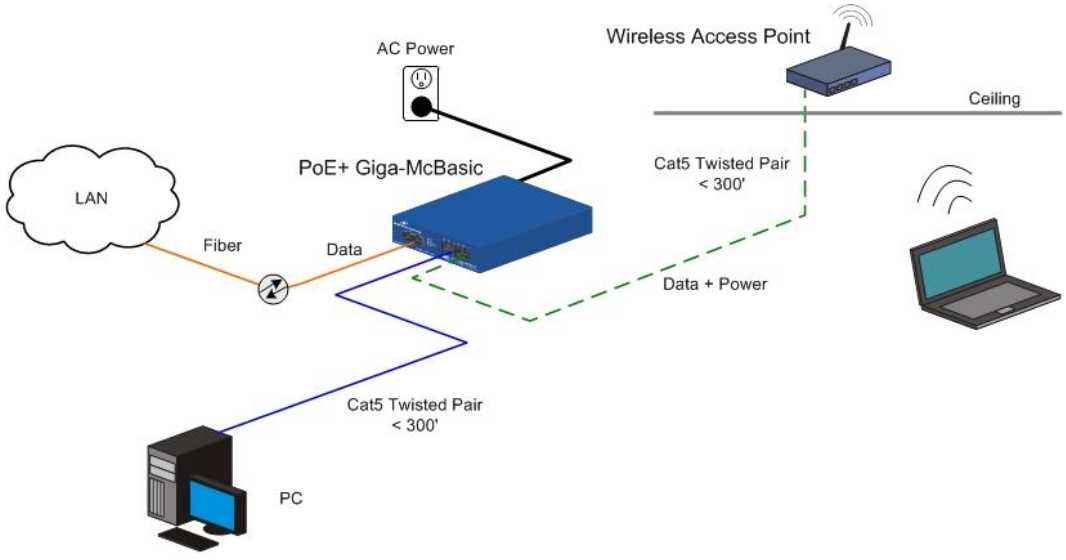
The PoE+ Giga-McBasic LFPT is a solution for private network applications that require power over Ethernet for locations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, two PSE 10/100/1000Base-T copper ports that provide Power-over-Ethernet (PoE) (IEEE802.3af) to connect a non-PoE unit to the same fiber uplink. As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE+ Giga-McBasic LFPT provides up to 25.5 watts per copper port and is powered by an internal power supply, supporting 100-240 VAC.

NOTE
Unless noted otherwise, any reference is applicable for both the 1x9 and SFP version of the *PoE+ Giga-McBasic LFPT* in this manual.

The PoE+ Giga-McBasic LFPT is a solution for private network applications that require power over Ethernet for locations inside buildings where PoE is required to power an Ethernet device. The standalone unit offers a model with one SFP or fixed fiber transceiver, 1x9, uplink for the network connection, one PSE 10/100/1000Base-T copper port that provides PoE (IEEE802.3af), and one 10/100/1000Mbps copper port. As a fiber-fed demarcation unit, it provides both power and data to a remote device over a standard CAT5 copper line, eliminating the need for a power connection to the remote device. The PoE+ Giga-McBasic LFPT provisions up to 25.5 watts on one copper port, and can be powered by an external AC adapter or DC terminal block.

The SFP uplink can support fiber or copper SFPs. The fiber SFP, available in SC or LC connectors, supports 100FDX or 1000FDX; a copper SFP supports the SGMII interface (10/100/1000Mbps). The SFP, with or without DDMI, is available for purchase through B&B Electronics Distributors. The SFP must be MSA-compliant.

The copper ports auto negotiate to the connected device's speed and duplex mode: 10 Mbps, 100 Mbps or 1000 Mbps, and HDX or FDX (including Flow Control). The PoE+ Giga-McBasic supports jumbo frames up to 10240.

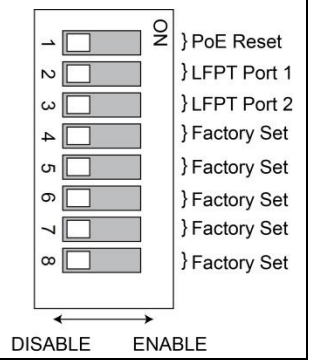


INSTALLATION

PoE+ Giga-McBasic LFPT installs virtually anywhere: as a standalone, table-top device, with rackmount ears or using a Wallmount bracket. The rackmount ears and wallmount bracket are optional accessories available through B&B Electronics distributors.

Installation Tip
Several models of the PoE+ Giga-McBasic LFPT support single-strand fiber for operation. Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs. For example, connect a PoE+ Giga-McBasic LFPT, TX/SSLX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. PoE+ Giga-McBasic LFPT, TX/SSLX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20km] or both are single/PLUS [40km]).

DIP SWITCH CONFIGURATION poE+ GIGA-McBASIC LFPT SFP & 1X9

DIP Switch	Name	Definition	Default Setting	DIP Switch
1	PoE Reset	ON forces Ports 1 & 2 PSE/PoE to OFF on LOS of Fiber input	OFF	
2	LFPT Port 1	ON enables LFPT for Port 1 and the FX Port	OFF	
3	LFPT Port 2	ON enables LFPT for Port 2 and the FX Port	OFF	
4	Factory Set	Do not change	OFF	
5	Factory Set	Do not change	OFF	
6	Factory Set	Do not change	OFF	
7	Factory Set	Do not change	OFF	
8	Factory Set	Do not change	OFF	

PoE RESET DSW

When set to ON, it will force the PSE output power on the copper port OFF when the LINK state is lost on the fiber segment. By default, the DSW is set to OFF.

LFPT DSW FOR PoE+ GIGA-McBASIC LFPT

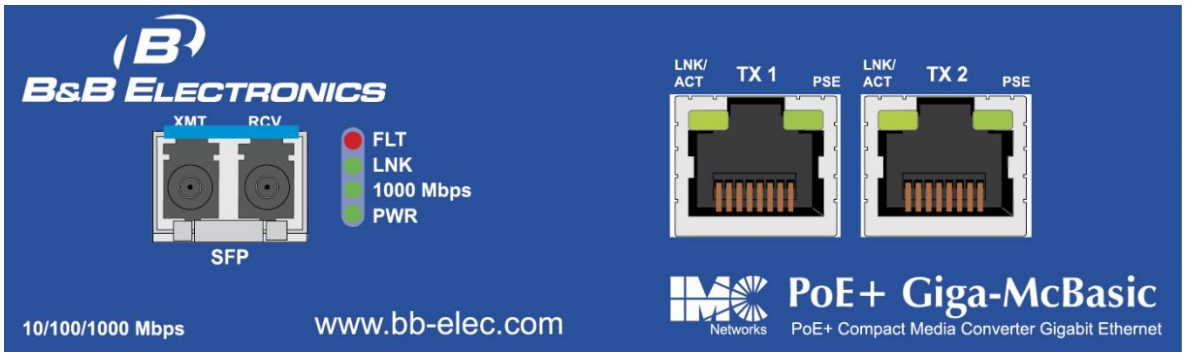
The DIP Switches for LFPT is to allow a LOS fault to be passed through the unit. When enabled, if link is lost on the FX port, the transmit on the TX port is disabled. If link is lost on a TX port, the transmit on the FX Port is disabled.

NOTE
With the fault switches – PoE Reset, LFPT Port1 and LFPT Port 2, only one fault condition is recognized at a time. The first fault condition is in charge. So if TX Port1 has no link and then the FX Port loss link, the lose of TX Port 1 link causes the FX Port to disable transmit.

LED OPERATION PoE+ GIGA-McBASIC LFPT SFP AND 1X9

The PoE+ Giga-McBasic LFPT includes LEDs for three ports, as shown below:

PoE+ Giga-McBasic LFPT SFP



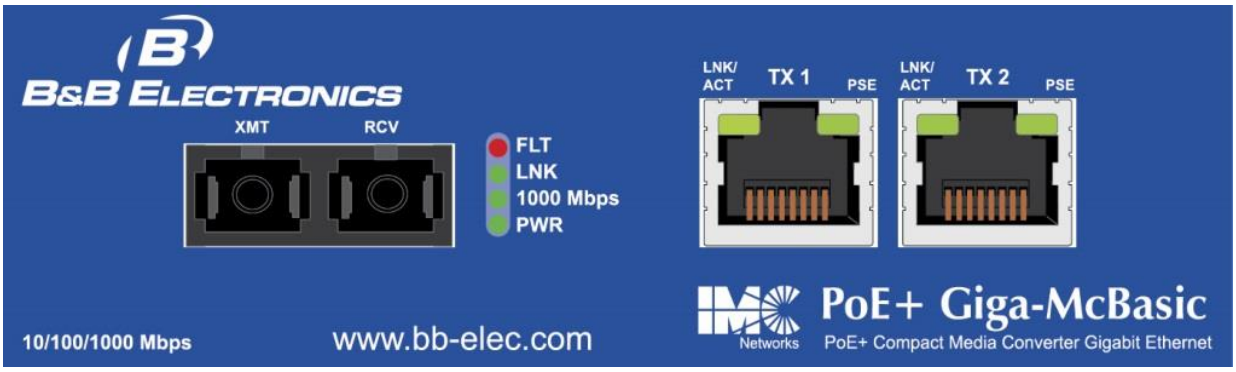
SFP LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when SFP is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX1, TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power

PoE+ Giga-McBasic LFPT 1x9



SFP LED Functions are as follows:

FLT	Glows red when a fault has been detected on the unit
LNK	Glows green with a valid link
1000 Mbps	Glows green when SFP is running at 1000Mbps
PWR	Glows green when unit is powered

RJ-45 LED Functions are as follows:

LNK/ACT (TX1, TX2)	Glows green with a valid link Blinks green when activity is detected
PSE (TX1, TX2)	Glows green when port is supplying PoE power Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature Off if the port is not supplying power

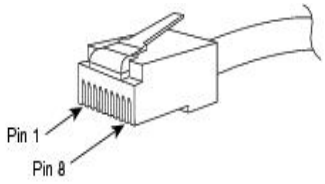
TROUBLESHOOTING

If the PoE+ Giga-McBasic LFPT is not responding to the power provided to it, the following conditions may be responsible:

- Blinks green during fault conditions: 1 Hz flashes indicates an overload or short; 4 Hz flashes indicates out of range voltage or over-temperature. The PSE LED should maintain solid green, to indicate consistent power. Check the PD device and its requirements.
- If the PoE injector has power that can be verified, but the PSE LED is off, then contact B&B Electronics technical support.

RJ-45 PINOUTS

The following table lists the pin configuration for the RJ-48 connector.



Pin#	Signal Name 1000M	Signal Direction 10/100M	PoE & PoE+ (ALT-B)
1	TXD1+	Out*	
2	TXD1-	Out*	
3	RXD2+	IN*	
4	D3+		+V
5	D3-		+V
6	RXD2-	IN*	
7	D4+		-V
8	D4-		-V

SPECIFICATIONS FOR THE PoE+ GIGA-McBASIC LFPT

Ethernet Connections

- 10/100/1000 BaseT
- Auto Negotiation
- AutoCross
- Flow Control
- 10240 MTU
- Full Line-Rate Forwarding

Input Specifications

Input Specifications

100 to 240 ± 10% VAC input, 50/60 Hz, 1.6A to 0.7A

Operating Temperature

+32°F to +104°F (0°C to +40°C)

Storage Temperature

-40°F to +185°F (-40°C to +85°C)

Humidity

5% to 95% (non-condensing); 0 to 10,000 ft. altitude

Dimensions

1.46” H x 4.76” W x 7.32” D (3.71 x 12.09 X 18.59 cm)

Power Characteristics

Consumes less than 10 watts (heating) plus PSE power

IEEE802.3af/at Power to field < 50 watts (2 x 25.5 watts)

Standards Compliance

- IEEE 802.3af Power Over Ethernet
- IEEE 802.3at PoE+ Standards
- IEEE 802.3 Ethernet Standards
- IEEE 802.3u Auto-Negotiation
- RFC-2474
- RFC-2475 DiffServ QoS

PoE PRECAUTIONS (FOR INSIDE-A-BUILDING INSTALLATION ONLY)

The PoE Giga-McBasic LFPT PoE+ Giga-McBasic LFPT and POE McBasic are for inside-a-building installation only. Both devices cannot be installed outside-a-building environment, as they cannot meet the PoE requirements, per the PoE standard. If installing the device outside, serious damage can occur and void the B&B Electronics' warranty.

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 Electronics 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

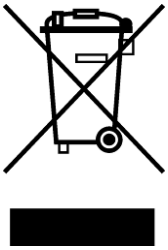
Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products

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.

SAFETY CERTIFICATIONS

UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (2006/95/EC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact B&B Electronics.

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.