



# M/GE-PSW-PSE-01

## Mini Fast / Gigabit Ethernet PoE+ Media Converter

**(1) 10/100/1000Base-T PoE+ RJ-45 Port + (1) 100/1000Base-X SFP Slot**



## User Guide

**33830 Rev. B**

## Cautions and Warnings

**Cautions** indicate that there is the possibility of poor equipment performance or potential damage to the equipment. **Warnings** indicate that there is the possibility of injury to person.

Cautions and Warnings appear here and may appear throughout this manual where appropriate. Failure to read and understand the information identified by this symbol could result in poor equipment performance, damage to the equipment, or injury to persons.



**Cautions** : While installing or servicing the power module, wear a grounding device and observe all electrostatic discharge precautions. Failure to observe this caution could result in damage to, or failure of the power module.



**Warning**: Do not connect the power module to an external power source before installing it into the chassis. Failure to observe this warning could result in an electrical shock, even death.

**WARNING**: Equipment grounding is vital to ensure safe operation. The installer must ensure that the power module is properly grounded during and after installation. Failure to observe this warning could result in an electric shock, even death.

**WARNING**: A readily accessible, suitable National Electrical Code (NEC) or local electrical code approved disconnect device and branch-circuit protector must be part of the building's installed wiring to accommodate permanently connected equipment. Failure to observe this warning could result in an electric shock, even death.

**WARNING**: Turn any external power source OFF and ensure that the power module is disconnected from the external power source before performing any maintenance. Failure to observe this warning could result in an electrical shock, even death.

**WARNING**: Ensure that the disconnect device for the external power source is OPEN (*turned OFF*) before disconnecting or connecting the power leads to the power module. Failure to observe this warning could result in an electric shock, even death. See Electrical Safety Warnings for Electrical Safety Warnings translated into multiple languages.

### M/GE-PSW-PSE-01 Mini Fast / Gigabit Ethernet PoE+ Media Converter User Guide, 33830 Rev. B

## Record of Revisions

Rev.	Date	Description
A	5/6/21	Initial release at FW 24228A_RC1, PCB 11639 Rev 1A, 11638 Rev1A and power supply 25173.
B	5/19/21	Update power supply connector information and remove powered chassis references.

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## Introduction

The Transition Networks M/GE-PSW-PSE-01 Gigabit Ethernet Stand-alone Mini Media Converter provides cost effective media conversion between 10/100/1000Base-T ports and 100/1000Base-SX/LX ports. With its fixed configuration, deployments are just plug-and-play, and its small size makes it ideal for locations where space is limited. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, but it also provides rate conversion allowing legacy 10/100 copper devices to connect to 1000Base-SX/LX fiber.

In addition to providing copper to fiber conversion, this converter is also classified as Power Sourcing Equipment (PSE), meaning it combines data received over the fiber optic link with 56VDC input power to provide power and data to a Powered Device (PD) over the twisted Pair cable, while complying with the IEEE 802.3af and IEEE 802.3at PoE+ standards. This allows the user to take advantage of the benefits of fiber cabling, along with the benefits of Power-over-Ethernet (PoE) technology.

Supporting PoE allows this converter to send data and power to devices like VoIP Phones, Security Cameras, and Wireless Access Points, especially if they must be located in remote areas of your network that can only be reached with fiber optic cabling.

## Ordering Information

SKU	Description
M/GE-PSW-PSE-01	(1) 10/100/1000Base-T PoE+ RJ-45 port [100 m/ 328 ft.] to (1) 100/1000Base-X SFP slot (empty). Includes Power Supply 25173. <b>Note:</b> Cannot be used with M-MCR-01 or E-MCR-05 Racks due to power limitations.
<b>Optional Accessories (sold separately)</b>	
SFP/SFP+ Modules	See our <a href="#">SFP Products</a> page (sold separately)
WMBM	Wall Mount Bracket for MiniConverters (sold separately)
DRBM	DIN Rail Mount Bracket for MiniConverters (sold separately)
RMBM	Rack Mount Bracket for MiniConverters, use with RMS19-SA4-02 (sold separately)

**Power Supply included:** to order the corresponding country specific power supply, add the extension below to the end of the SKU. For example: M/GE-PSW-PSE-01-NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, and -BR = Brazil.

## Features

- Wall mount, DIN Rail, or table top installation
- External AC/DC power supply included with country specific power cord
- 2-port 10/100/1000 copper to fiber media conversion with IEEE 802.3at PoE+ on the copper port
- Supports full 30 Watts of power to the twisted pair port
- SFP slots can support any 100Base-FX or 1000Base-X fiber SFP module
- Supports Auto-Negotiation and Auto-MDI/MDIX
- Supports Active Link Pass Through (ALPT)
- Supports Auto Power Reset
- Jumbo frame support
- 8K MAC address table
- LEDs indicators for power status, Link/Activity per port, PoE status/classification, APR state
- Plug-and-Play fixed configuration, no DIP switches
- Over-current protection, Under-current protection, and Fault protection input

## Feature Descriptions

### Active Link Pass Through (ALPT)

The ALPT (Active Link Pass Through) function is a feature that disables Link Pass Through after the device has first powered up. ALPT allows the user to see the link status with only one media connected (either the Fiber or the Copper link). Once both media ports have established link or are active at the same time, the converter will automatically enable its Link Pass Through feature. The LPT feature now enabled will monitor the link status of each port. If either port's link status changes to down, the converter will disable the other port to indicate to the end device that the link partner is no longer communicating. The ALPT feature is permanently enabled. A power cycle to the device will disable the LPT feature again until both links are established.

## Auto Power Reset

The Automatic Power Reset (APR) feature is enabled after the device has been powered for one minute and the ALPT feature is enabled. When both of these conditions are met, whenever the fiber link goes down due to the fiber partner link status or the ALPT forwarded copper link partner status. The converter will detect that the fiber link is down, disable the POE power for 5 seconds, and then allow the PSE to re-start power negotiation with a PD (powered device).

After an APR event the converter will lock out the power reset feature for five minutes to allow time for the PD device to fully boot and re-establish link. When the five minute timeout is complete and the Fiber link has been re-established, the APR functions will begin monitoring for the next fiber link down event.



Circled in red above is the location of LED 4 that can be seen inside the metal. LED 4 will turn solid green when the APR function is enabled and is monitoring the fiber link.

## Auto-Negotiation

The Auto-Negotiation feature is permanently enabled.

## Auto-MDI/MDIX

The Auto-MDI/MDIX feature is permanently enabled.

## Specifications and Standards

Spec	Description
Standards	IEEE 802.3-2012, IEEE 802.3af/at PSE-PoE, IEEE 802.3ab, IEEE 802.3z, IEEE 802.3x, IEEE 802.3az
Switch Features	Max Packet Size 10,000 bytes Max MAC Addresses 8k 1Mbit shared buffer memory
Dimensions	Width: 1.8" [46 mm] x Height: 0.85" [22 mm] x Depth: 3.3" [85 mm]
Power Consumption	34W with full IEEE 802.3at 30 Watt load
Power Supply Connector	Standard 2.5 mm barrel
Power-over-Ethernet	Max PoE Budget: 30 Watts
Environment	Operating Temp: 0°C to +40°C (with included power supply) Storage Temp: -40°C to +85°C Operating Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. (0.9 kg) (complete package) 4.17 oz. (118 g) (converter alone)
MTBF	M/GE-PSW-PSE-01 only: 2,941,024 hours (Telcordia SR-332) Included Power Supply only (25173): 159,357 hours (MIL-DHBK-217F)
Certifications	EN55032-2012 Class A, IEC 61850-3:2002, EN55024-2010, CE Mark, Power Supply is UL listed
Warranty	Lifetime
Data speed	TP: 10/100/1000Mbps SFP: 100FX/1000X. SGMII not supported on this product
DIP Switches and Jumpers	None; all features are permanently enabled
Certifications	EN55032-2012 Class A, IEC 61850-3:2002, EN55024-2010, CE Mark, Power Supply is UL listed

The M/GE-PSW-PSE-01 is an 802.3at device; it will only provide power on one pair. Highlighted in yellow below is the M/GE-PSW-PSE-01 pinout.

### PSE Pinout Alternatives:

Conductor	Alternative A (MDI-X)	Alternative A (MDI)	Alternative B (All)
1	Negative <sub>VPSE</sub>	Positive <sub>VPSE</sub>	
2	Negative <sub>VPSE</sub>	Positive <sub>VPSE</sub>	
3	Positive <sub>VPSE</sub>	Negative <sub>VPSE</sub>	
4			Positive <sub>VPSE</sub>
5			Positive <sub>VPSE</sub>
6	Positive <sub>VPSE</sub>	Negative <sub>VPSE</sub>	
7			Negative <sub>VPSE</sub>
8			Negative <sub>VPSE</sub>

**Note:** All PD devices must accept power on either pair (Alternative A or Alternative B).

## Installation

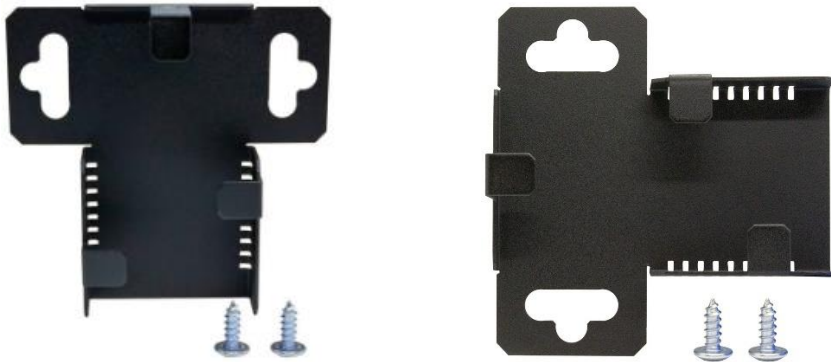
**Warning:** Do not attempt to open the enclosure or service the power supply. Opening the enclosure may cause serious injury or death. There are no user replaceable or serviceable part in this device.

### Installation Overview

- Mount the Media Converter in its final location; see ‘Mounting Options’ below.
- Perform Grounding procedure.
- Insert SFP.
- Install and connect the fiber cable.
- Install and connect the copper cable.
- Power up the media converter.
- Check LED status.

### Mounting Options

**WMBM:** 3.3” Wall Mount Bracket for Mini Media Converters:



**DRBM:** 3.3” DIN Rail Mount Bracket for “Mini” Media Converters:

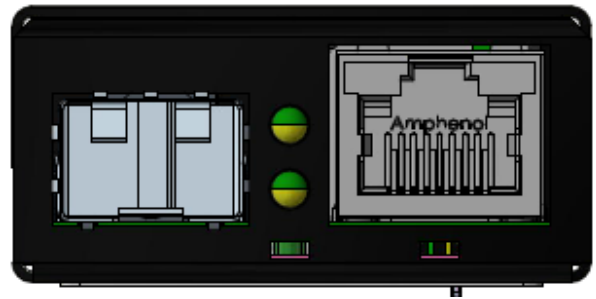


**RMBM:** Rack mount bracket for mini media converters, used with RMS19-SA4-02:



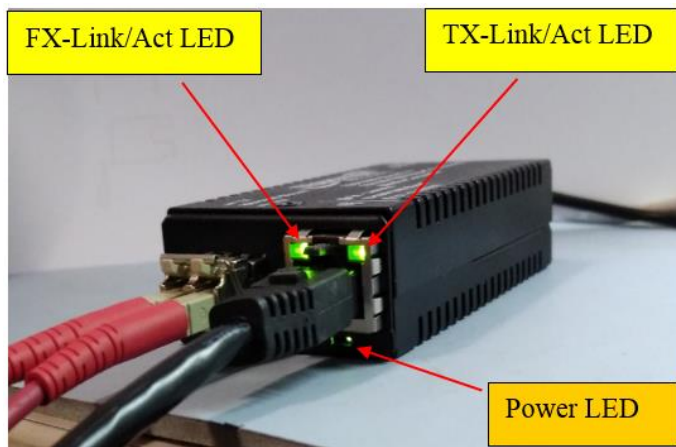
# Operation

## Status LEDs



When the module has been installed and configured, verify the converter is operational by viewing the LEDs.

- The Power LED indicates the module is receiving power.
- The Fiber status LED indicates the fiber optic connection has been established.
- The RJ-45 TP status LEDs indicate the speed of the RJ-45 port connection.
- The PoE status LED indicates the module has established a successful detection of a PD and is supplying Power over Ethernet.



LED descriptions are as follows:

FX-Link/Act LED  
 Green ON = Link (fiber)  
 Flashing = Activity

TX-Link/Act LED  
 Green ON = Link (copper)  
 Flashing = Activity

Power LED  
 Green ON = Connected to power

- LED 4 can be seen inside the metal. LED 4 will turn solid green when the APR function is enabled and is monitoring the fiber link. LED 4 is circled in red below. See the [Auto Power Reset](#) description above.





**LED Descriptions**

LED	Description
Two-up Bi-Color LEDs	Top LED - TP Status: <ul style="list-style-type: none"> <li>• Green = Gigabit</li> <li>• Amber = 100 or 10 speeds.</li> <li>• Off = no link</li> <li>• There is no indication for duplex</li> </ul> Bottom LED - Fiber Status: <ul style="list-style-type: none"> <li>• 100FX TP Link/Activity: Yellow On = Link. Yellow Blinking = Activity</li> <li>• 1000X TP Link/Activity: Green On = Link. Green Blinking = Activity</li> </ul>
Power LED	Green ON = power applied to board
PoE Status LED	When powering an 802.3af PD: Yellow = On When powering an 802.3af PD over-load or short: Yellow Blinking at 1Hz Vin under-voltage or IC over-temp: Yellow Blinking at 4Hz When powering an 802.3af PD: Green = On When powering an 802.3af PD over-load or short: Green Blinking at 1Hz
APR Status LED inside enclosure	<ul style="list-style-type: none"> <li>• Solid green: APR is armed and ready to reset power to the POE Power from the PSE port when the fiber link status goes to the down state.</li> <li>• Blinking green: APR is not ready; waiting for timeout or fiber link to be re-established.</li> </ul>

**Note:** The TP-L/A Act 1000 and SFP-L/A Act 1000 flash green because this converter has MAC Learning disabled, so whenever a packet is received on one port, that packet will always be repeated on the other port. This functionality causes the Activity LED for BOTH ports to ALWAYS flash in unison, even for unidirectional traffic.

# Compliance Information

## Declaration of Conformity

***Declaration of Conformity***

*Transition Networks, Inc.*  
Manufacturer's Name

*10900 Red Circle Drive, Minnetonka, Minnesota 55343 U.S.A.*  
Manufacturer's Address

***Declares that the products:***  
**M/GE-PSW-SFP-01 PoE+ Mini PSE**

***Conforms to the following Product Regulations:***

FCC Part 15 Class A, EN 55032:2012, EN 55024:2010  
Directive 2014/30/EU, Directive 2015/863/EU  
Low Voltage Directive 2014/35/EU  
IEC /EN 60950-1:2006+A2:2013  
2011/65/EU EN 50581:2012  
EN 55011: 2009 +A1: 2010 (Group 1, Class A)  
EN 55024: 2010 / EN 61000-6-2: 2005  
EN55022/EN61000-6-4 , EN55024/EN61000-6-2, IEC/EN61000-4-2, IEC/EN61000-4-3,  
IEC/EN61000-4-4, IEC/EN61000-4-5, IEC/EN61000-4-6, IEC/EN61000-4-8,  
IEC60068-2-27, IEC60068-2-32, and IEC60068-2-6

With the technical construction on file at the above address, this product carries the  
**CE Mark**

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standards(s).

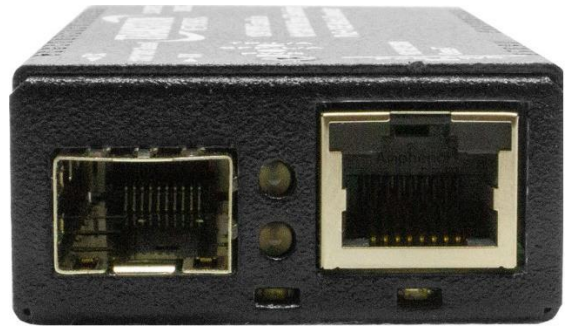
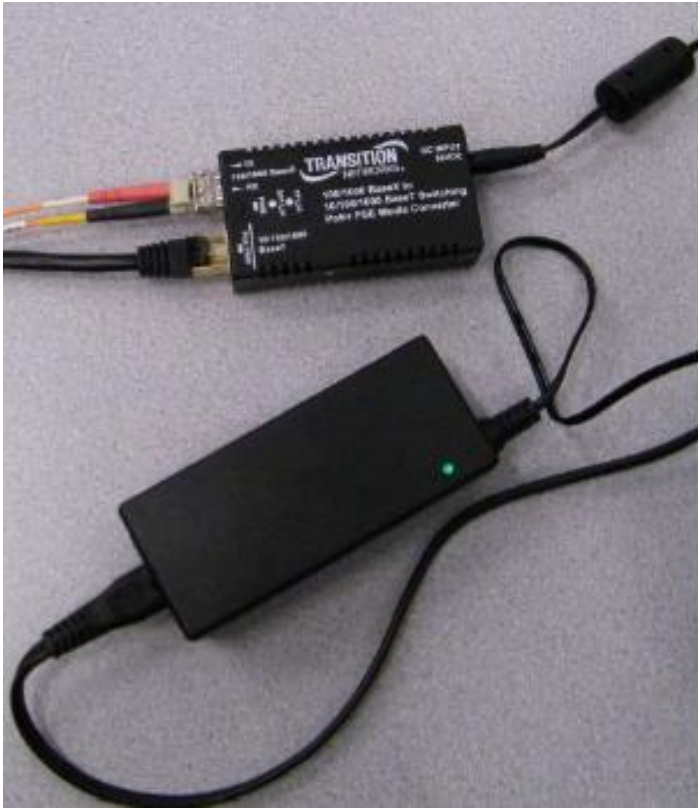
*Minnetonka, Minnesota*      *Sept 8, 2020*  
Place                                  Date

  
\_\_\_\_\_  
*Stephen Anderson*                                  *Vice President of Engineering*  
Full Name    Position

23141B

## Product Views





## Power Supply

The M/GE-PSW-PSE-01 uses Power Supply 25173.

### 25173 Commercial Power Supply

The 25173 AC/DC desktop power supply offer 40 watts of output power with an IEC-320-C8 AC inlet.

The 25173 has a rated input voltage of 100-240VAC, and is designed to meet Energy Star Ver. 2.0, DoE Level VI, and ErP STEP2. It has over-voltage and over-current protection and UL, cUL, CB, CE, FCC, RCM, BSMI, IRAM, and CCC safety approvals.



### 25173 Features

- Rated Input Voltage 100-240 VAC
- 40 Watts Max
- Single Output
- Designed to meet Energy Star Ver. 2.0, DoE Level VI, and ErP STEP2
- IEC 320-C8 AC inlet
- ROHS Compliant
- Over-voltage and over-current protection
- UL, cUL, CB, CE, FCC, RCM, BSMI, IRAM, and CCC Safety Approvals

### 25173 Specifications

All specifications are based on 25°C, Nominal input Voltage, and Maximum Output Current unless otherwise noted. We reserve the right to change specifications based on technical advances.

Dimensions: 4.45 in. x 1.93 in. x 1.38 in. (113 mm x 49 mm x 35 mm)

### Input Specifications

Specification	Min.	Typ.	Max.	Unit of Measure
Rated Input Voltage	100		240	VAC
Normal Line Input	115VAC/60Hz, 220VAC/50Hz			
Input Frequency	47		63	Hz
Input Current (full load)			2.0	A
Input Fuse (Input Hot line side must be fused)	Rating (3.15A/250V)			
Inrush Current @ 110VAC, cold start, max load		< or = 80		A
Inrush Current @ 220VAC, cold start, max load		< or = 160		A

**Output Specifications**

Specification	Min.	Typ.	Max.	Unit of Measure
Output Voltage		56		VDC
Regulation	53.2		58.8	VDC
Line Regulation			± 1	%
Dynamic Load Regulation		± 5		%
Voltage Tolerance		± 5		%
Output Power			40	W
Output Current	0		0.71	A
Ripple and Noise			720	mV
No Load Power Consumption			0.1	W
Hold-Up Time		≥ 8.3		mSec.
Rise Time		≤ 50		mSec.
Turn-On Time			3	Seconds

**Protection**

Specification	Min.	Typ.	Max.	Unit of Measure
Over Current Protection	110		200	%
Over Voltage Protection			175	%

**Environmental Specifications**

Specification	Min.	Typ.	Max.	Unit of Measure
Operating Temperature	0		40	°C
Storage Temperature	-20		85	°C
Operating Humidity	10		90	%
Storage Humidity	5		90	%
Temperature Rise (Optional)			45	°C
Altitude (Operation and Non-operation)	Sea Level		5000	M
Stability			2	%
MTBF (MIL-HDBK-217F, 25°C)	100,000			Hours

## General Specifications

Specification	Min.	Typ.	Max.	Unit of Measure
Efficiency		≥ 87.59		%
IR		≥ 50		MΩ
Leakage Current		≥ 500		uA

**Voltage Isolation:** DC ground may be separated from AC neutral and AC line.

**Insulation Test:** Between primary and secondary circuit: 500VDC, 2 Sec.

**Configuration:** Line, Neutral: 2-Wire, AC Input.

**Hi-Pot Test:** Between primary and secondary circuit: 3000VAC/4242VDC, 3mA 2 Sec.

**Drop Out:** Output voltage should remain in specified range, through the absence of line input during ½ cycle, at full load and normal AC line input.

## Physical Specifications

**Weight:** 10.58 Oz (300 Gr.)

**Dimensions:** 4.45 in x 1.93 In. x 1.38 In. (113mm x 49mm x 35mm)

**Enclosure Material:** 94V-0 Minimum

**Output Cable:** UL2468#20

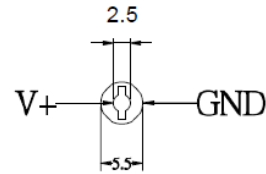
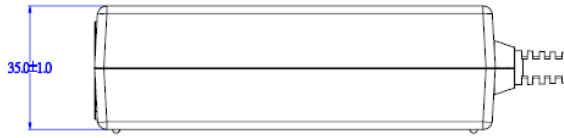
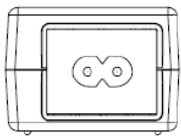
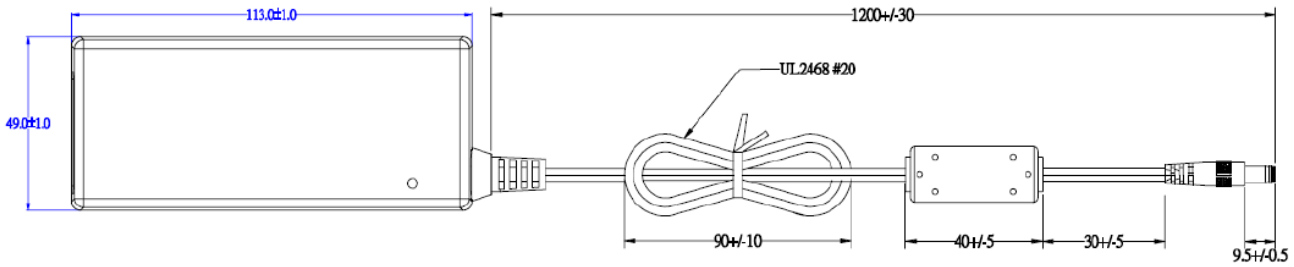
## Safety Characteristics

Safety Approvals	UL, CUL, CB, CE, FCC, RCM, BSMI, IRAM, CCC	
EMI	CISPR 32, EN 55032 FCCP Part 15	Class B Class B
ESD	IEC 61-000-4-2	Contact: ±4kV Air: ±8kV
RS	IEC 61-000-4-3	Frequency: 80~1000MHz Field Strength: 3V/M, 80% AM (1KHz)
EFT	IEC 61-000-4-4	1.0KV on Input Power Ports
Surge	IEC 61-000-4-5	Line to Line: ±1kV (peak)
Efficiency		Energy Star Ver. 2.0, DoE Level VI, ErP STEP2

## Notes

1. Specifications subject to change without notice.

25173 Mechanical Drawing



**WALL**  
Wall Industries, Inc.  
Exeter, NH 03833, USA  
**AC ADAPTER**

P/N: DTEA10682E-56TN2  
AC INPUT : 100-240V~, 2.0A, 50-60Hz  
DC OUTPUT : 56.0V=0.71A 40.0W

CAUTION:  
FOR INDOOR USE ONLY  
I.T.E. USE ONLY

DATE CODE: 

20	21	22				1	2	3	4	5
1	2	3	4	5	6	7	8	9	0	

13128 C1C3 MADE IN CHINA

UL LISTED I.T.E. POWER SUPPLY 41TJ LPS RoHS  
CCC VI 10 RoHS

## Troubleshooting

1. Make sure the function you are trying to perform is supported on this device; see “Features” on page 4.
2. Verify the install procedure was followed properly; see “Installation” on page 7.
3. Check the front panel LEDs; see “Status LEDs” on page 8 and “LED Descriptions” on page 8.
4. Ensure that the power supply is correctly connected; see “Power Supply” on page 12. If the power LED is blinking, it may indicate incorrect or faulty power supply, or that the power adapter is not the proper type of voltage and cycle frequency for the AC outlet.
5. Make sure attached devices (SFP, WAP, IP camera, etc.) are installed properly and operating correctly; see the attached device’s documentation.
6. Verify that the TX and RX cables on the converter are connected to the RX and TX ports, respectively, on the other device.
7. Record device information (see below)
8. Contact Transition Networks Technical Support (see below).

**Problem:** The Auto Power Reset feature only works once after cold boot; subsequent tries to get the feature to power-cycle a PD fail to cut the PD's power.

*Description:* There is about a 5 minute time out set on this feature to prevent constant power cycling of the PD, due to the boot time of some PD devices taking a couple of minutes.

*Solution:* Wait for a couple of minutes for the PD device to boot.

## Contact Us

**Technical Support:** Technical support is available 24-hours a day:

US and Canada: 1-800-260-1312

International: 00-1-952-941-7600

### Main Office

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