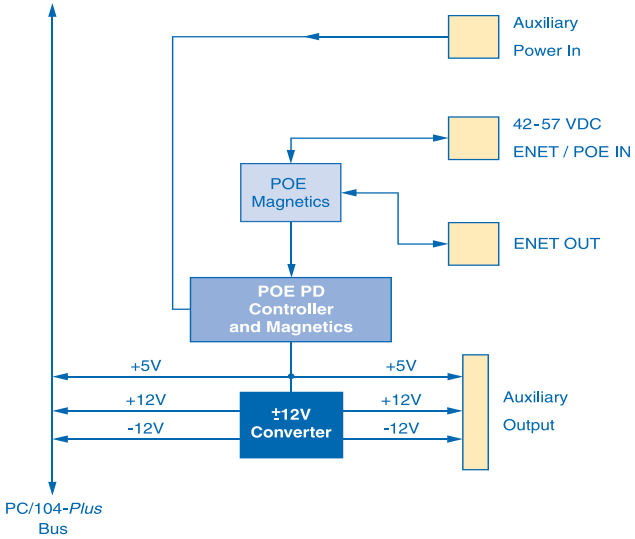
PPM-PS397-POE-1

25W Power over Ethernet PD
PC/104-*Plus* Power Supply

Features

- PC/104-*Plus* Powered Device (PD) power supply for Power over Ethernet (PoE) applications
- PoE input voltage: 42 – 57VDC
- Dual Polarity Power Sourcing Equipment (PSE) supported
- 802.3af/at compliant with Class 4 signature
- Auxiliary 16 – 60VDC input supported
- Isolated voltage outputs which provide up to 25W combined power: +5VDC, +12VDC, and -12VDC
- Line and load regulation ±100mV for all outputs
- No minimum load required for regulation
- Outputs have short circuit/overload protection
- Four LEDs provide visual indication of the DC power input and output voltages
- High efficiency and fast transient response
- No fan or heat sink required
- -40°C to +85°C temperature operation
- Small size: 3.6 x 3.8 inches (90 x 96mm)
- Other standard or custom configurations available
- PC/104-*Plus* and RoHS compliant



PPM-PS397-POE-1 Block Diagram

Product Description

The PPM-PS397-POE-1 is an isolated 25W, PC/104-*Plus* form factor, 802.3af/at compliant, PoE PD power supply. The Class 4 signature supports up to twice the power of 802.3af compliant PD devices. The PPM-PS397-POE-1 is designed to power a single board computer from DC power extracted from a CAT5 cable sourced by an 802.3af/at compliant PSE device configur ed as either an endpoint or midspan device.

The PPM-PS397-POE-1 accepts positive or negative polarity power in the 42 – 57VDC range from the RJ45 Ethernet interface. It converts the power to three rails: +5VDC @ up to 5.0A, +12VDC @ up to 1.0A, and -12VDC @ up to 500mA. These three output power rails are wired to the PC/104-*Plus*, PC/104, and auxiliary output connectors. The combined output power for the three rails must not exceed 25W, with a maximum of 12W available from the combination +12V and -12V.

The PPM-PS397-POE-1 can alternatively take power from an auxiliary input power connector rather than from the Ethernet PoE interface. The auxiliary input power range is from 16 – 60VDC.

The auxiliary input is dominant. When present, it will always power the PD regardless of the state of PoE. If auxiliary power is connected, the PPM-PS397-POE-1 will not draw any power from the PoE interface. The auxiliary power input is hot-swap capable

PPM-PS397-POE-1: PC/104-*Plus* Power over Ethernet Power Supply

From the input voltage source, an isolated converter topology is used to produce a +5V @ 5.0A isolated power rail which then feeds two tandem +12V and -12V converters. Each output is short circuit protected and current limited. A minimum load is not needed to bring the supply into regulation.

The PPM-PS397-POE-1 will show up as a Class 4 device during two event PoE discovery. When used with a Type 2 PSE, such as WinSystems' PPM-GIGE-2-POE, the device can provide up to 25W of power. When used with a PSE that does not recognize the Class 4 signature or that requires dynamic link layer protocol, the PSE may default to Class 0 and limit power to 12.5W.

Status Indicators - The PPM-PS397-POE-1 has LED indicators to display a visual status of the output voltages.

Input Connectors - The PoE power is taken from one RJ-45 connector on the board and the data is passed directly to the adjacent RJ-45 connector.

A 2-pin Phoenix Combicon-type connector is used on the board for the auxiliary voltage input. It allows for power cables to be easily yet securely brought to the board with a quick way to remove them, if necessary. The mating connector is provided.

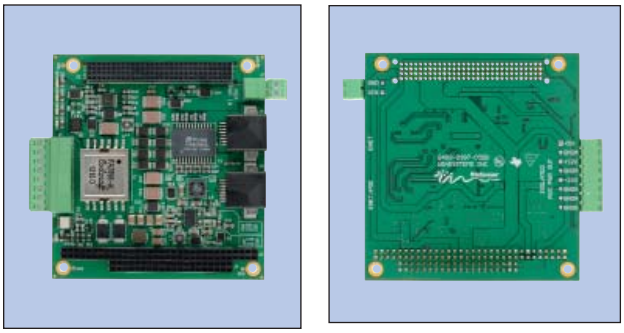
Auxiliary Connector - The three isolated power outputs are wired to an 8-pin, 3.81mm right angle header. This is a Phoenix Combicon-type connector with the mating connector provided.

PC/104-*Plus* Connectors - The three isolated power outputs and ground are wired directly to their defined pins on the PC/104-*Plus* and PC/104 connectors.

Fanless - No fans or heat sinks are required to meet the extended operating temperature range of -40° to +85°C.

Other Standard Configurations - This board is provided in two additional versions: PCM-PS397-POE-1 for PC/104 systems and ISM-PS397-POE-1 for standalone embedded systems.

Ruggedized and Custom Configurations - WinSystems offers additional ruggedized options and custom configurations for OEMs. Please contact an Applications Engineer to discuss your specific requirements.



Front and Back Picture of PPM-PS397-POE-1

Technical Specifications

Electrical

PoE Voltage In	42 to 57VDC
Auxiliary Voltage In	16 to 60VDC
Combined Maximum	25W (12W from ±12V)
Output Voltage	+5VDC @ up to 5.0A +12VDC @ up to 1.0A -12VDC @ up to 500mA 1500VAC
Output Isolation	±100mV all outputs
Line Regulation	±100mV all outputs
Load Regulation	

Connectors

	Two RJ-45
Ethernet	2-pin, 3.81mm right angle header
Auxiliary In	8-pin, 3.81mm right angle header
Auxiliary Out	120-pin, 2mm stack-through 104-pin stack-through
PC/104-*Plus*	
PC/104	

Environmental

Operational from	-40°C to +85°C
RoHS Compliant	

Mechanical

Dimensions	3.6 x 3.8 inches (90 x 96mm)
Weight	3.94 oz. (112 gm)
PC Board	0.078 inches, four layer FR4

Ordering Information

PPM-PS397-POE-1	PC/104-*Plus* triple output, DC/DC power supply
PCM-PS397-POE-1	PC/104 triple output, DC/DC power supply
ISM-PS397-POE-1	Triple output, DC/DC power supply

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