

PM100

Power over Ethernet Module



1. Features

IEEE 802.3af compliant

Small SIP package size - 53mm (L) x 14mm (H)

Low ripple and Low noise output

Low ESR decoupling capacitor

Input voltage range 36V to 60V

Overload, short-circuit, and over-temperature protection

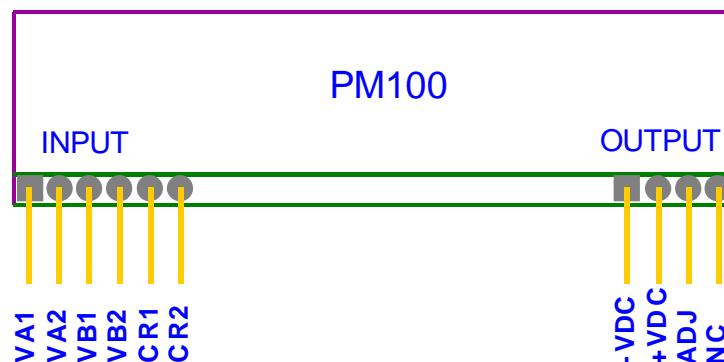
Support IEEE 802.3af under voltage Lockout (UVLO)

Adjustable Output Voltage: 3.3V, 5V, 9V, or 12V

High efficiency DC/DC conversion

Maximum Output Power 12 Watt for Class 0

Pb Free & RoHS Compliant



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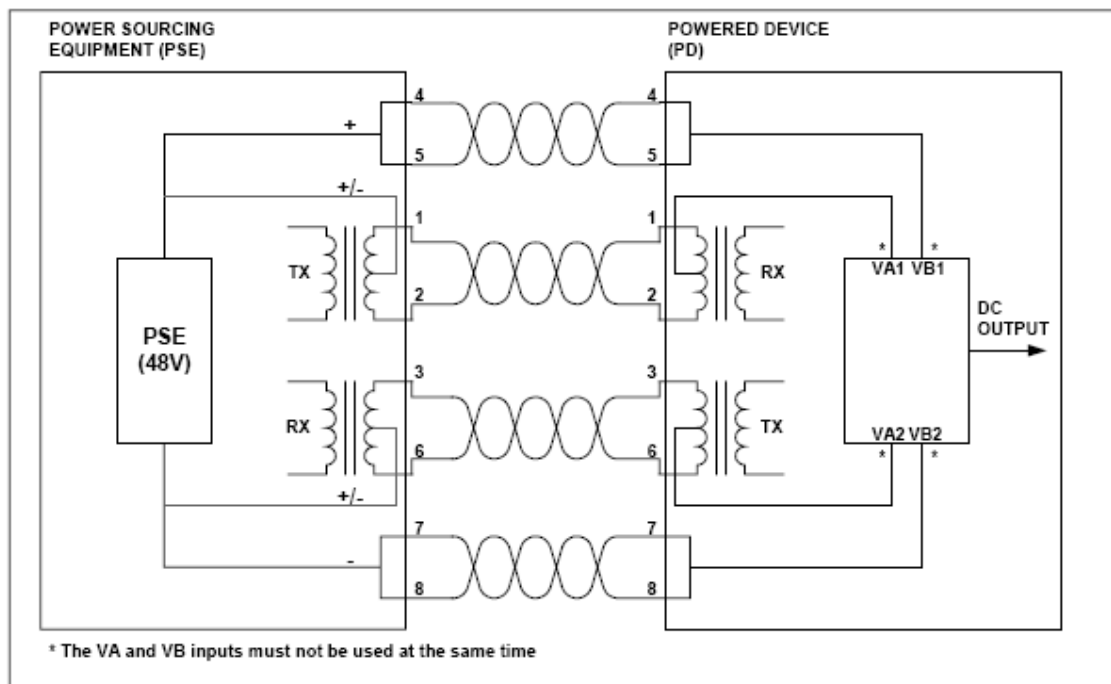


2. Descriptions

The PM100 modules are designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet (PoE) standard.

IEEE 802.3af allows for two power options for Category 5 cables and the PM100 series have two pairs of power inputs pins: - VA1&2 and VB1&2 to accommodate this, see Figure 1. The PM100 provides the PoE compatibility detection and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15.4W power to the port. The PM100 modules are compatible with Class 0 to Class 3 equipment.

The high efficiency DC/DC converter operates over a wide input voltage range and provides a non-isolated regulated low ripple and low noise output. The DC/DC converter also has built-in output overload, output short-circuit and over-temperature protection.



3. Pin Descriptions

Input Pin	Name	Description
1	VA1	RX Input (1). This input pin is used in conjunction with VA2 and connects to the centre tap of the transformer connected to pins 1 & 2 of the RJ45 connector (RX) - it is not polarity sensitive.
2	VA2	TX Input (2). This input pin is used in conjunction with VA1 and connects to the centre tap of the transformer connected to pins 3 & 6 of the RJ45 connector (TX) - it is not polarity sensitive.
3	VB1	Direct Input (1). This input pin is used in conjunction with VB2 and connects to pin 4 & 5 of the RJ45 connector.
4	VB2	Direct Input (2). This input pin is used in conjunction with VB1 and connects to pin 7 & 8 of the RJ45 connector.
5	CR1	Class Resister (1). Connect an external resistor to CR2 will change the current class of the module. With no resistor fitted the module will default to Class 0.
6	CR2	Class Resister (2). Connect an external resistor to CR1 will change the current class of the module. With no resistor fitted the module will default to Class 0.

Output Pin	Name	Description
1	-VDC	Negative DC Output. This pin provides the regulated output from the DC/DC converter.
2	+VDC	Positive DC Output. This pin provides the regulated output from the DC/DC converter.
3	ADJ	Output Voltage Adjust. The output voltage can be adjusted from its nominal value, by connecting an external resistor from this pin to either the +VDC pin or the -VDC pin.
4	NC	No connection and can be use freely.

Note: 1. Grounding

If PM100 is supplied from a grounded source (e.g. a standard multi-channel PSE), it is important that the -VDC output NOT be connected to the same ground. Connecting -VDC to this ground might short circuit the input diode bridge, and prevent correct operation of the PM100.

4. Technical Specifications

Maximum Output Power:

Ordering Info	Nominal Output Voltage	Maximum Output Power	Marking
PM100-12	12.0V	12 Watts	12
PM100-9	9.0V	12 Watts	9
PM100-5	5.0V	10 Watts	5
PM100-3	3.3V	6.5 Watts	3

Class Resistance:

PoE Class	External Resistance (CR1 - CR2) (Ohms \pm 1%, 1/10W)	Minimum Power	Maximum Power
0	Open	0.44 Watts	12.95 Watts
1	127	0.44 Watts	3.84 Watts
2	69.8	3.84 Watts	6.49 Watts
3	45.3	6.49 Watts	12.95 Watts

Transient Surge Protection:

System-Level ESD immunity: Max 16KV for IEEE 802.3af

Conduction Surge: Max 1KV with 0.3 μ seconds rise time and 50 μ seconds fall time for IEEE 802.3af

Physical Dimension:

Height x Width x Depth:

14mm x 53mm x 15mm (with 90 degree Pin Header)

14mm x 53mm x 12mm (with 180 degree Pin Header)

Operating Environment:

- Temperature: 0 ~ 80 °C