

WinSystems®

PC/104 MODULE

PCM-DC/DC

Wide Range DC/DC

PC/104 Power Supply

FEATURES

- PC/104 Bus DC/DC power supply
- Two ultra wide input voltage ranges:
9VDC - 36VDC, 12V nominal and
18VDC - 75VDC, 48V nominal
- Input polarity reversal protection circuit
- Fused input line
- Triple output voltage:
+5VDC at 2A or 3A
+12VDC at 0.416A
-12VDC at 0.416A
- Voltage status LEDs
- Short circuit protection on outputs
- Overvoltage protection on all outputs
- Wide operational temperature range:
-40°C to +70°C with no derating

The PCM-DC/DC is a family of PC/104 Bus DC/DC converters suited for telecommunications, industrial, solar or battery powered applications. The module plugs directly into a PC/104 Bus stack to provide either a single +5V or triple output voltages for small systems. Nominal DC input voltages of +12 or +48 volts are accepted with a wide input range.

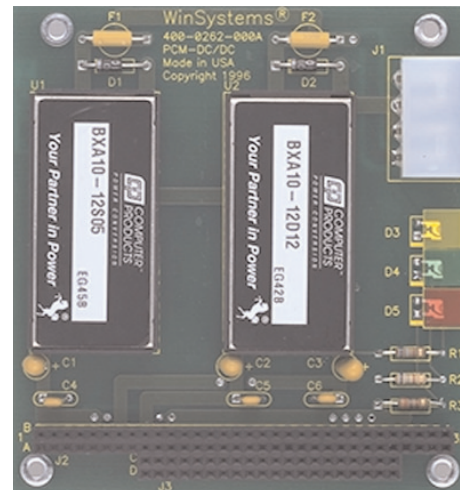
FUNCTIONAL CAPABILITY

DC/DC Converters - Either one or two wide input DC/DC converters are mounted on the PCM-DC/DC module. One converter supplies the +5 volts and the other ± 12 volts. Each of these power supplies have an input protection circuit that prevents a short circuit if the unit is wired into the main DC supply backwards. Also, an in-line fuse is wired on the input side of each power supply module for additional protection.

Each DC/DC power supply module is a high efficiency (78% min.) design which requires no minimum current loading on the output(s). It will maintain regulation on all output voltages down to zero current thus eliminating the need for load resistors. This makes the power supply ideal for low power systems.

The power supply has a six-sided metal case for EMI/RFI protection. They also have input-output isolation of 1500 VDC. The power supply modules have been designed to meet or exceed various agency safety and emissions specifications.

Input Voltage Range - The PCM-DC/DC-12 has a nominal input voltage of 12VDC but will accept a range from 9 to 36 VDC. The PCM-DC/DC-48 has a nominal input



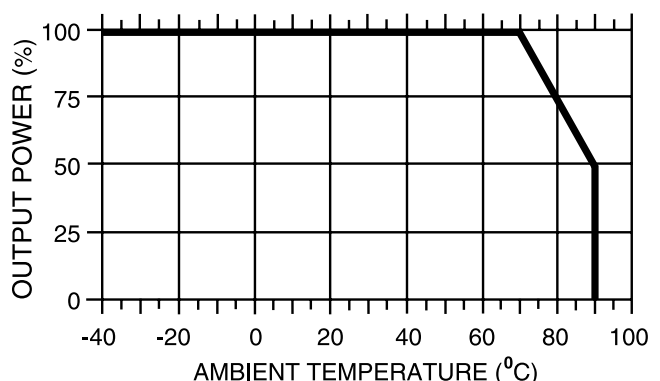
voltage of 48VDC but will accept a range from 18 to 75 VDC.

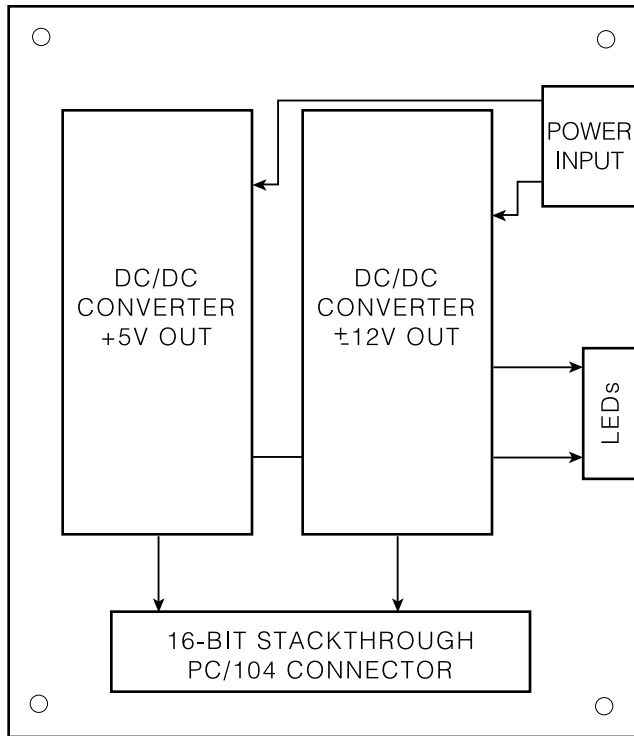
Input Power Connector - A 4-pin standard AMP connector is located on the edge of the board. It is the same connector as used on a disk drive so that it is easy to power up and test a system with a +12VDC local power supply. The pin assignments are as follows:

1	+12 Volts DC
2	Ground
3	Ground
4	No Connection

Output Voltage Range - Either a single or triple output voltages are available depending upon the model selected. Up to 2A is available on the +5 volt output and up to 0.416A is available on the ± 12 volt outputs. This is sufficient power for systems that do not require floppy or hard disk support.

POWER DERATING CURVE (Single Output)





PCM-DC/DC BLOCK DIAGRAM

Output Loading and Protection - Thermal shutdown is provided for long-term short circuit and overload clamp protection. Overvoltage protection is provided on each output. Operating temperature is from -40°C to +70°C with no derating. From +70°C to +85°C the output derating is shown in the chart on the previous page.

Output Power Connector - The output voltages are wired to their respective voltage pins on the PC/104 Bus connector. The other PC/104 Bus pins are not wired to the board and simply pass through.

PC/104 Connector Power Assignments

Voltage	Row and Pin Number
+5V	B3, B29, D16
+12V	B9
-12V	B7
Ground	A32, B1, B10, B31, B32, C0, D0, D18, D19

The standard PCM-DC/DC is supplied with a stack-through PC/104 connector. As a factory option, it can be ordered with non-stackthrough connectors.

Status LEDs - Three light emitting diodes (LEDs) are on each backplane to visually indicate the presence or absence of each of the power supply voltages. A different color is assigned to each voltage for easy and instant status recognition. Red is assigned to +5VDC, green is assigned to +12VDC, and yellow is assigned to -12VDC.

SPECIFICATIONS

Electrical

Input Voltage Ranges:

PCM-DC/DC-12-xxx: 9VDC to 36VDC

PCM-DC/DC-48-xxx: 18VDC to 75VDC

Output Voltage/Current

+5VDC; 0A min. to 2A max.

±12VDC; 0A min. to 0.416A max. (only available on the PCM-DC/DC-12-512 and PCM-DC/DC-48-512)

Mechanical

Dimensions: 3.6" x 3.8" (90mm x 96mm)

Connectors

Input Power: 4-pin Molex disk drive

Output Power: PC/104 connector

Environmental

Operational Temperature:

-40°C to +70°C with no derating

-40°C to +85°C with derating

The output power is derated linearly from 100% at +70°C to 50% at +90°C (ambient temperature)

ORDERING INFORMATION

PCM-DC/DC-12-500	PC/104 DC/DC supply, 12VDC In, +5VDC Out
PCM-DC/DC-12-512	12V DC/DC supply, +5, ±12 VDC Output
PCM-DC/DC-48-500	PC/104 DC/DC supply, 48VDC In, +5VDC Out
PCM-DC/DC-48-512	48V DC/DC supply, +5, ±12 VDC Output

A 3 Amp, 5V output version of the PCM-DC/DC module is also available. Its input voltage range is narrower than the standard 2 Amp version. The input ranges are 9V to 18V DC, 18V to 36V DC and 36V to 75V DC. Contact the factory for the part number and pricing if you need the extra current for the 5V output.

