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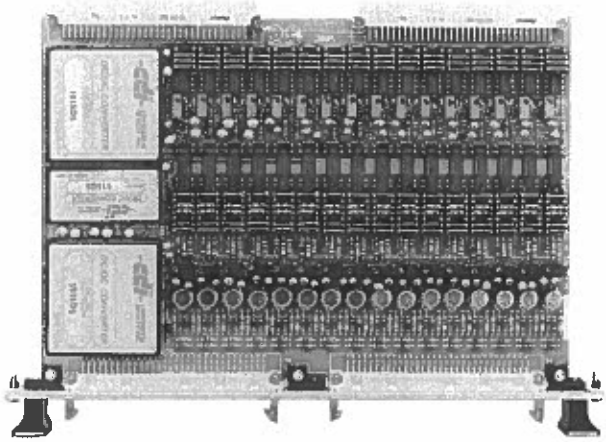
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VMIVME-4199

ANALOG ISOLATION AMPLIFIER BOARD 16 CHANNELS



FEATURES

- 16 ISOLATED ANALOG VOLTAGE AMPLIFIER CHANNELS
- HIGH ISOLATION, 500 VDC
- HIGH BARRIER IMPEDANCE, 1,000 MΩ
- DIFFERENTIAL INPUTS
- HIGH OUTPUT CURRENT, 20 mA
- INTERNAL POWER SUPPLIES
- RESISTOR PROGRAMMABLE GAIN, x1 TO x100
- SEPARATE INPUT AND OUTPUT CONNECTORS, 64-pin DIN
- FRONT PANEL ACCESS

APPLICATIONS

- SYSTEM ISOLATION
- GROUND LOOP ELIMINATION
- TRANSDUCER ISOLATION
- DATA ACQUISITION
- POWER MONITORING
- MOTOR/GENERATOR INSTRUMENTATION

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VMIVME-4199

ANALOG ISOLATION AMPLIFIER BOARD 16 CHANNELS

SPECIFICATIONS

FUNCTIONAL CHARACTERISTICS

GENERAL DESCRIPTION:

The VMIVME-4199 is a 16-channel analog isolation amplifier board, designed specifically for use in VMEbus applications. The VMIVME-4199 provides galvanic isolation between analog inputs and outputs. All inputs are differential. The board is self-contained except for electrical power, and is entirely independent of the VME control bus. A functional block diagram of the VMIVME-4199 is shown in Figure 1.

Each channel is individually programmable with a single resistor for voltage gains from x1 to x100. Unused inputs and outputs can be disconnected to further optimize overall isolation characteristics. The inputs are configurable to be either inverting or noninverting.

The VMIVME-4199 Board is an essential component of systems in which ground loops must be eliminated or where potential differences between signal returns are beyond the 20 to 30 V isolation limits of conventional analog boards.

COMPATIBILITY:

Double height 6U, with +5 VDC power on P1 and P2. No VMEbus control functions.

ELECTRICAL SPECIFICATIONS @ 25 °C (1)

NUMBER OF CHANNELS:	Sixteen
CHANNEL VOLTAGE GAIN:	x1.000 ±0.04 percent; channels are individually resistor-programmable from x1 to x100 (2)
GAIN DRIFT:	±40 ppm/°C
ISOLATION BARRIER:	
RESISTANCE; NET, ALL CHANNELS:	1,000 MΩ
CAPACITANCE; TOTAL, ALL CHANNELS:	250 pfd, input to output 250 pfd, input to VMEbus 500 pfd, output to VMEbus
BREAKDOWN VOLTAGE:	500 VDC
ISOLATION MODE REJECTION:	AC: 108 dB @ 60 Hz DC: 120 dB

INPUT CHARACTERISTICS (Each Channel)

CONFIGURATION:	Differential, noninverting; field configurable for inverting inputs
VOLTAGE RANGES:	±10 V full scale; resistor-programmable from ±0.1 V to ±10 V full scale (2)
IMPEDANCE (DIFFERENTIAL):	20 MΩ/10 pfd typical 18.5 MΩ/20 pfd (worst case)

(1) Typical values, unless otherwise indicated.

(2) The gain of each channel is resistor-programmable from x1 to x100 with header-mounted gain resistor Rg as:
Rg (ohms) = 40,000/(GAIN-1); (Tempco of Rg < 25 ppm/°C).

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OFFSET VOLTAGE:	±10 mV (adjustable to zero)
OFFSET VOLTAGE DRIFT:	±200 µV/°C
COMMON MODE VOLTAGE RANGE (CMV):	±10 V, relative to input power return
COMMON MODE REJECTION (CMRR):	72 dB @ 60 Hz
OVERVOLTAGE PROTECTION:	±15 V indefinitely; ±50 V for one second

OUTPUT CHARACTERISTICS (Each Channel)

VOLTAGE RANGE:	±10 V full scale (gain times input voltage)
OUTPUT LOADING:	±20 mA over ±10 V output range, maximum capacitance 0.1 mfd (3)
RIPPLE:	10 mVp-p

DYNAMIC RESPONSE

SETTLING TIME:	200 µs to 0.01 percent
FREQUENCY RESPONSE:	50 kHz, -3 dB; small signal (at unity gain)
SLEW RATE:	2 V/µs
OVERLOAD RECOVERY TIME:	150 µs; 50 percent overload
INTERCHANNEL CROSSTALK:	-72 dB @ 1 kHz

PHYSICAL/ENVIRONMENTAL SPECIFICATIONS

AMBIENT TEMPERATURE:	0 °C to +55 °C, operating -20 °C to +85 °C, storage
RELATIVE HUMIDITY:	10 percent to 80 percent, noncondensing
ALTITUDE:	Operation to 10,000 feet
VMEbus ELECTRICAL INPUT POWER:	+5 VDC @ 6.0 A maximum

RELATED PRODUCTS AND APPLICATIONS

VMIC offers a broad range of Analog Input/Output (AIO) products for VME systems, and supports these products with comprehensive application information. Contact VMIC for a description of current products and a list of Application Guides.

(3) 270 mA total load as a sum of all 16 channels.

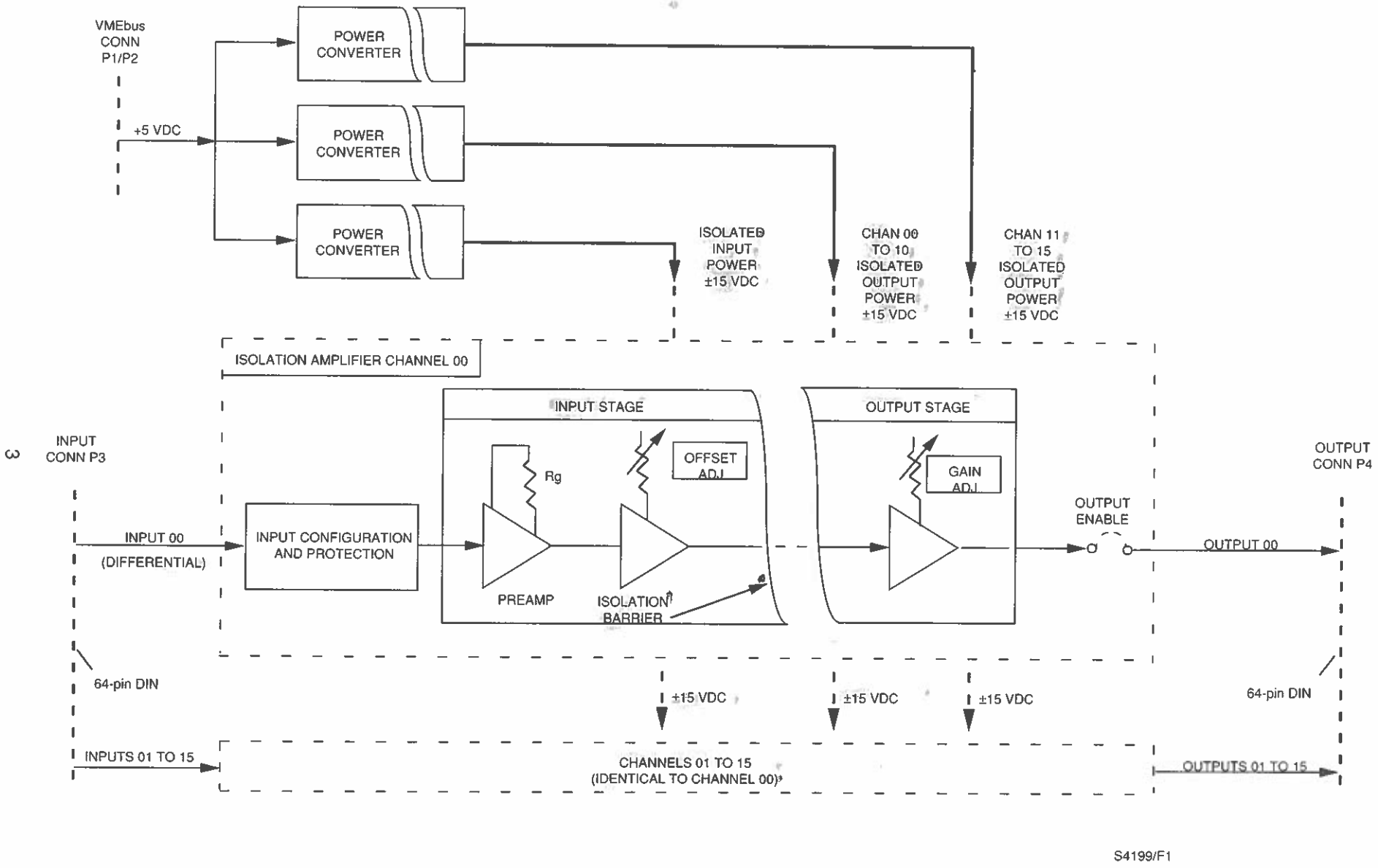


Figure 1. Analog Isolation Amplifier Board Block Diagram

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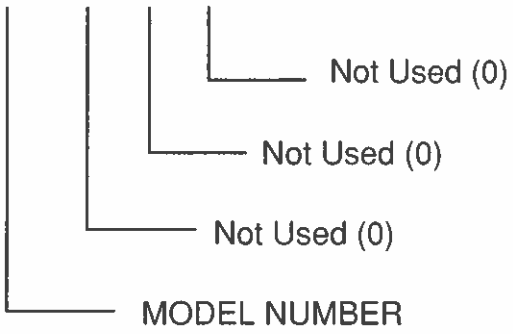
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ANALOG ISOLATION AMPLIFIER BOARD 16 CHANNELS

ORDERING INFORMATION

VMIVME - 4199 - A B C*



*The VMIVME-4199 Board has no ordering options, and should be specified with part number VMIVME-4199-000.

I/O CONNECTOR DATA

TYPICAL CONNECTING COMPONENT	P3, P4 (PANDUIT)
COMPATIBLE MATING CONNECTOR (INSULATION DISPLACEMENT)	120-964-455E (64-pin DIN)
STRAIN RELIEF	100-000-032
P.C. BOARD I/O CONNECTOR	120-964-053A

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