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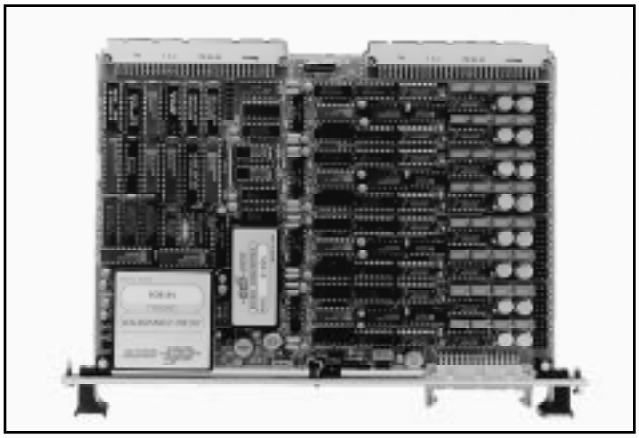
Find the *Abaco Systems / VMIC VMIVME-4120-000* at our website: ***Click HERE***

VMIVME-4120
16-Channel D/A Current or Voltage Output Board

- 16 analog output channels
- Jumper-selectable voltage or current outputs
- Current transmitter ranges (0 to 20 mA, 4 to 20 mA, and 5 to 25 mA)
- Output voltage ranges (0 to +5 V, 0 to +10 V, ±2.5 V, ±5 V, ±10 V)
- 12-bit resolution
- Front panel outputs (P3)
- On-board DC-to-DC converter or external power supply option
- Optional voltage-only outputs
- Complies with VMEbus specification
  - — ANSI/IEEE STD 1014-1987
  - — IEC 821 and 297

APPLICATIONS

- Industrial process control
- Current source reference for data acquisition
- Programmable current source for test equipment
- Automated manufacturing
- GE-Fanuc 90-70 series PLC



INTRODUCTION — The VMIVME-4120 Analog Output Board provides 16 high-quality analog output channels. These channels are jumper-selectable for voltage outputs, current loop outputs, or a combination of voltage and current loop outputs. Each output range is also jumper-selectable. A block diagram of the board is shown in Figure 1.

FUNCTIONAL CHARACTERISTICS

(Typical at +25 °C and rated power supplies unless otherwise stated.)

Compliance: This product complies with VMEbus specification ANSI/IEEE STD 1014-1987 IEC 821 and 297, with the following mnemonics:
A16: D16, D08 (EO): 29, 2D

Board Address: The physical address for the board may be selected by on-board jumpers. VMEbus address lines A06 through A15 are decoded for board selection.

VMEbus Access: Address modifier bits are jumper-selected and decoded to support nonprivileged short I/O or supervisory short I/O. The board is factory configured for supervisory short I/O.

Output Data Transfer: Data for each analog output channel is written directly into an on-board RAM location dedicated to a specific channel. The data is then periodically retrieved from the RAM, and converted to an analog voltage which is then transferred to one of 16 output sample-and-hold output buffers.

Memory Test: This product is designed with dual-port on-board memory that may be tested by executing a memory diagnostic for operational verification.

System Reset: Application of the system reset signal via the VMEbus initializes the board into a state with all voltage outputs disconnected from the output connector (P3). Current outputs are set to the lowest value of the output range selected. For example, if 4 to 20 mA is the output range selected, then power up or system reset will set the current output to 4 mA.

Front Panel Fail LED: If an error condition occurs during diagnostics, a software-controlled LED may be illuminated to visually indicate a failure. The LED is illuminated by system reset at power up and is extinguished upon successful diagnostic execution.

VOLTAGE ANALOG OUTPUTS

Number of Output Channels: Sixteen, one Sample-and-Hold per channel

Ordering Options

Oct. 28, 1994 800-004120-000 B	A	B	C	–	D	E	F
VMIVME-4120 –			0	–			

A = +15 V Power Option
0 = On-Board DC-to-DC Converter
1 = User-Supplied ±15 V Power (via VMEbus P2 Connector)
B = Output Option
0 = Current or Voltage Output
1 = Voltage Only Output
C = 0 (Option reserved for future use)

P3 Connector Data

Compatible Cable Connector	Panduit No. 120-332-435E
Strain Relief	Panduit No. 100-000-042
PC Board Header Connector	Panduit No. 120-332-033A

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
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Full-Scale Analog Output (Jumper-Selectable):

Unipolar:	0 to +10 V	Bipolar:	±2.5 V
	0 to + 5 V		±5.0 V
			±10.0 V

Analog Output Code: The 12-bit Digital-to-Analog Converter (DAC) accepts digital codes in straight binary and offset binary

Output Load Current: 5 mA, maximum at full accuracy

Resolution: 12 bits

Output Impedance: 0.33 Ω

Total Error: ±0.05 percent of full-scale range

Maximum Settling Time to 1 LSB: 1.7 ms

Refresh Update Rate: 588 Hz (default); 1,600 Hz (FAST REFRESH). The FAST REFRESH rate provides a filtered output for complex functions; whereas, the 588 Hz rate provides settling to 0.01 percent for stepped outputs at each update. The 1,600 Hz rate provides settling to 0.2 dB (2.3 percent). Both rates provide settling to 0.01 percent in 1.7 ms.

Output Short Circuit Protection: Indefinite short to common; momentary short to ±25 V

Monotonicity: Monotonic over the full temperature range

Reset: All outputs are disconnected from the output connector at power up or reset

CURRENT ANALOG OUTPUTS

Number of Output Channels: Sixteen

Output Ranges (Jumper-Selectable): 4 to 20 mA, 0 to 20 mA, 5 to 25 mA (4 to 12 mA, 0 to 10 mA, and 5 to 15 mA also available)

Nonlinearity: 0.01 percent of span

Initial Offset Error: 7 µA

Offset Versus Temperature: 0.0005 percent of span/°C

Initial Span Error: 0.05 percent of span

Span Error Versus Temperature: 0.0025 percent of span/°C

Maximum Settling Time to 1 LSB: 1.7 ms

Load Resistance: 600 Ω maximum at 20 mA
480 Ω maximum at 25 mA

Reset: Current outputs are set to the lowest value of the output range selected

PHYSICAL/ENVIRONMENTAL

Temperature:

Operating:	0 to 55 °C (Standard VME slot)
	0 to 65 °C (1.6-in slot)
Storage:	-40 to +85 °C

Humidity: 5 to 95 percent relative, noncondensing

Altitude: Operation to 10,000 ft

Cooling: Forced air convection (Standard VME slot)
Convection (1.6-in. slot)

Dimensions: Double height Eurocard (6U) 160 x 233.35 mm

Output Connector: P3 (32-pin DIN) front panel connector (refer to the connector data in the Ordering Options)

Power Requirements: 2.5 A (typical) at +5 VDC
4.0 A (maximum)

Option-100: 670 mA (maximum) at +15 VDC
330 mA (maximum) at –15 VDC

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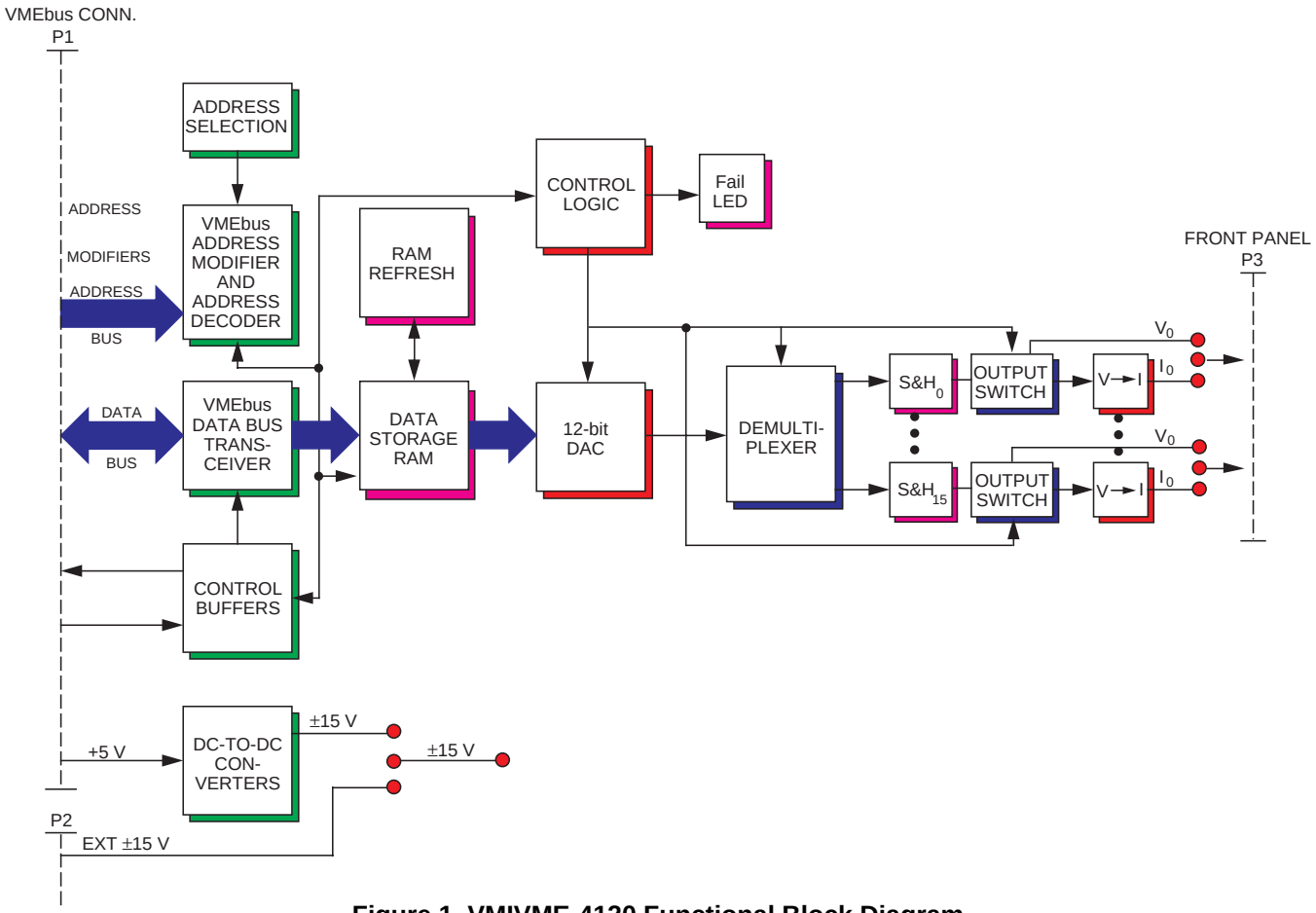


Figure 1. VMIVME-4120 Functional Block Diagram

APPLICATION AND CONFIGURATION GUIDES — The following Application and Configuration Guides are available from VMIC to assist the user in the selection, specification, and implementation of systems based on VMIC's products.

Title	Document No.
Digital Input Board Application Guide	825-000000-000
Change-of-State Board Application Guide	825-000000-002
Digital I/O (with Built-in-Test) Product Line Description	825-000000-003
Synchro/Resolver (Built-in-Test) Subsystem Configuration Guide	825-000000-004
Analog I/O Products (with Built-in-Test) Configuration Guide	825-000000-005
Connector and I/O Cable Application Guide	825-000000-006

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