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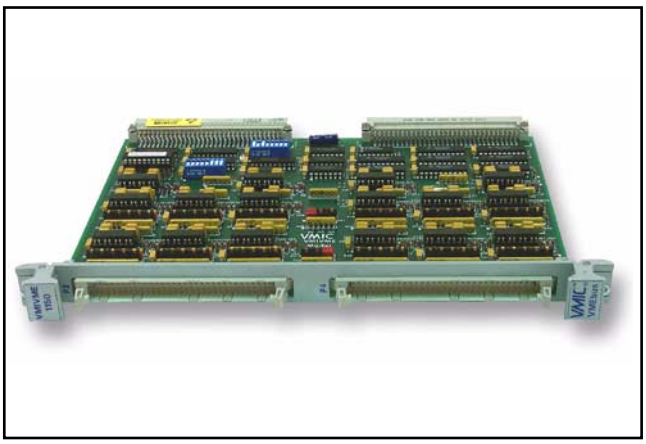
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VMIVME-1150
64-bit Optically Coupled Digital Input Board

- 64 optically coupled digital inputs
- 5 V to 48 VDC input range
- High isolation, 1,000 V sustained, 7,500 V pulsed
- Filtered input options
- Dual I/O connectors
- Contact closure sensing
- Voltage sourcing or current sinking input options
- Positive or negative true input options
- Double Eurocard form factor with front panel
- 8- or 16-bit data transfers
- Nonprivileged or supervisory I/O access
- High reliability DIN-compatible input connectors



FUNCTIONAL CHARACTERISTICS

Board Function: This 64-bit optically coupled, digital input board, was designed and optimized specifically for the VMEbus. Featuring high isolation, the VMIVME-1150 provides a flexible, low-cost 8-byte digital input port with high noise immunity. The Functional Block Diagram is shown in Figure 1.

Compatibility: The VMIVME-1150 is a standard, double height printed circuit board that is electrically and mechanically compatible with the VMEbus.

Input Organization: Eight input ports, each eight bits wide. The ports are arranged as eight contiguous 8-bit, read-only registers.

Addressing Scheme: Each 8-bit port, individually addressable on 8- or 16-bit boundaries anywhere within the short supervisory or short nonprivileged I/O space.

Board Address: The board address is selected by on-board DIP switches. Operation is supported in any available slot on the VMEbus backplane, except slot 1.

VMEbus Access: Address modifier bits are decoded to support either short supervisory or nonprivileged short I/O access. A single jumper is provided to support this option. This board is factory configured for short supervisory I/O access.

VMEbus Reply: A DTACK reply is generated in response to a data strobe (DS0 or DS1) and a decoded board address.

Data Transfer Type: D8, D16

Access Time: 250 ns maximum

Data Polarity: Order as positive or negative true. This is based upon the assertion of the inputs to this board. To assert an input, current must flow through the LED in the optocoupler. For a positive true board, this current will present a logical *one* to the VMEbus. If the board is ordered with negative true logic, then the board will present a logical *zero* to the VMEbus when the LED has current flowing through it.

INPUT CHARACTERISTICS

Signal Conditioning: Inputs can be either voltage sourcing or current sinking, with voltages accepted in the range from 5 to 48 V.

Input Voltage Options: Input voltage can be ordered as 5, 12, 24, or 48 V. Typical input circuit configurations are illustrated in Figure 2. Detailed specifications are provided in Tables 1 through 4.

Ordering Options

June 7, 1999 800-001150-000 E		A	B	C	–	D	E	F
VMIVME-1150	–				–			

A = Data Polarity and Input Type
1 = Positive True, Voltage Source + Logic Input*
2 = Negative True, Voltage Source + Logic Input*
3 = Positive True, Contact Sense
4 = Negative True, Contact Sense

B = Input Voltage
0 = 5 V
1 = 12 V
2 = 24 V
3 = 48 V
4 = 5 V High Input Current

C = Filter Option
0 = No Filter
1 = 2 µs Filter
2 = 10 µs Filter
3 = 5 ms Filter

* Logic input is not directly TTL compatible.

Connector Data

Compatible Cable Connector	Panduit No. 120-964-435
Strain Relief	Panduit No. 100-000-072
PC Board Header Connector	Panduit No. 120-964-033A

Note

Panduit is also known as ITW/Pancon.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
E-mail: info@vmic.com Web Address: www.vmic.com
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Input Configurations:
Voltage source
Voltage-source contact sense
Logic-level input

Filter Options: Input filtering for all 64 inputs is available, with standard time constants of 2 µs, 10 µs, or 5 ms.

Isolation: 10 MΩ, minimum

Isolation Voltage: 1,000 V maximum sustained voltage; 7,500 V for one second.

PHYSICAL/ENVIRONMENTAL

Dimensions: Standard VME double height Eurocard (160 x 233.5 mm)

Input Connectors: Two 64-pin DIN connectors

Temperature: 0 to +55 °C, operating
-40 to +85 °C, storage

Humidity: 20 to 80 percent, noncondensing

Power Requirements: +5 VDC at 1.1 A (typical), 2.2 A (maximum)

MTBF: 139,706 hours (217F)

RELATED PRODUCTS AND APPLICATIONS — VMIC offers a broad range of digital I/O products for VMEbus systems, and supports these products with comprehensive applications information. Contact the factory for a description of current products and a list of application guides.

SPECIFYING INPUT CONFIGURATIONS — To accommodate the variety of digital input requirements encountered in VMEbus applications, the VMIVME-1150 inputs can be configured for specific signal sources and time delays.

TRADEMARKS

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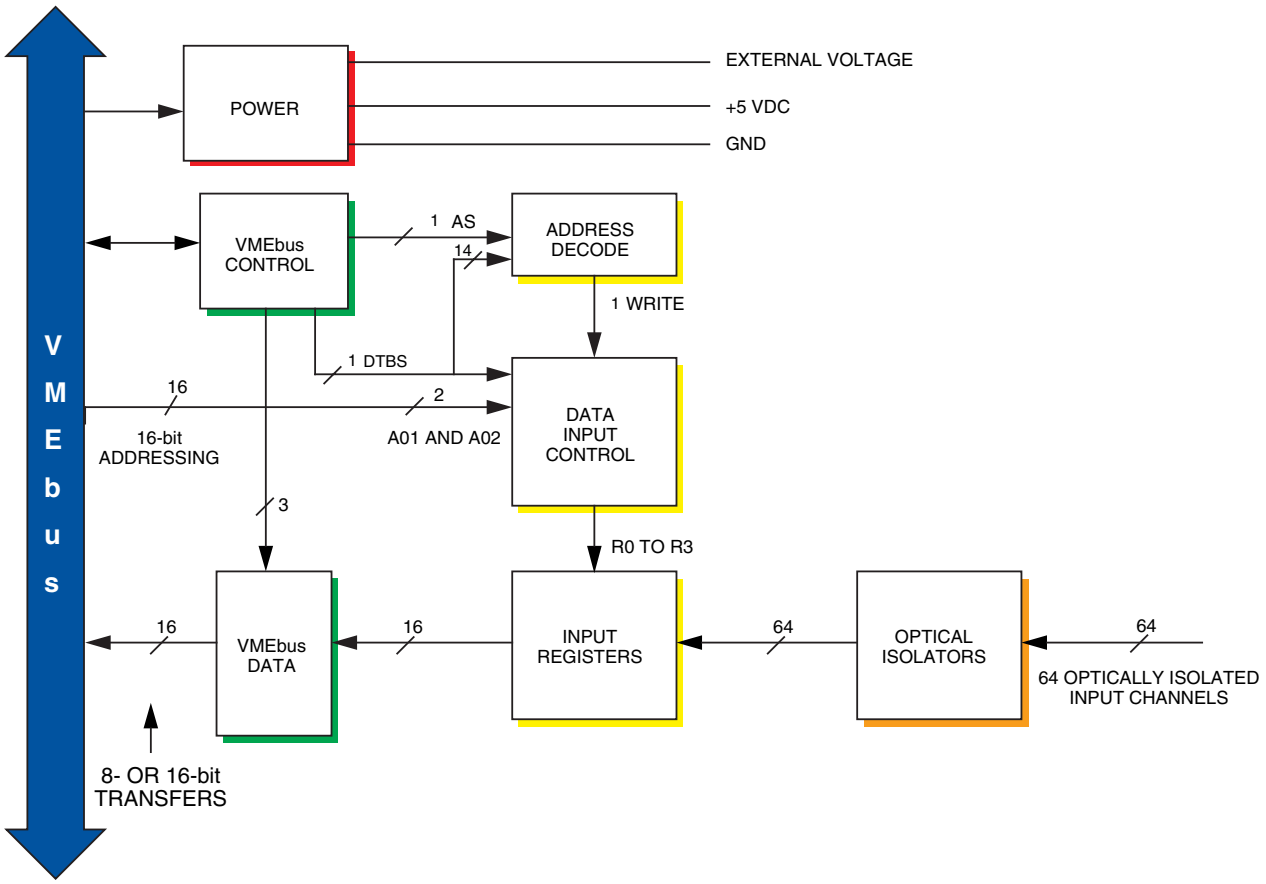


Figure 1. VMIVME-1150 Functional Block Diagram

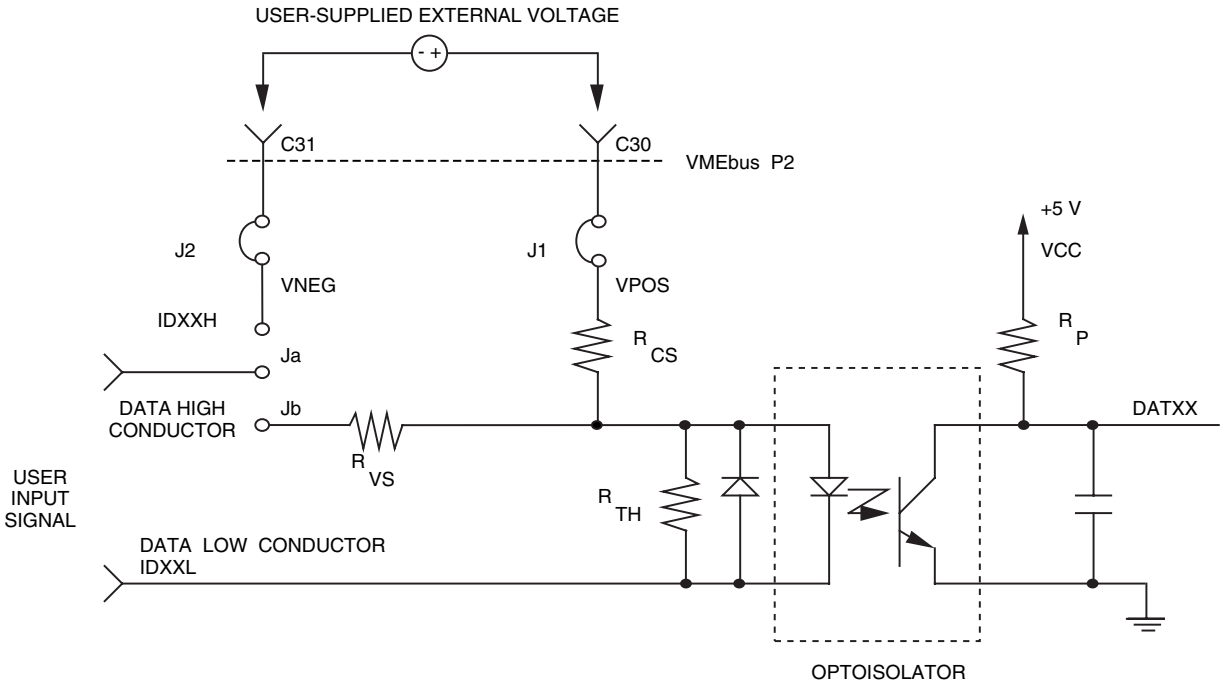
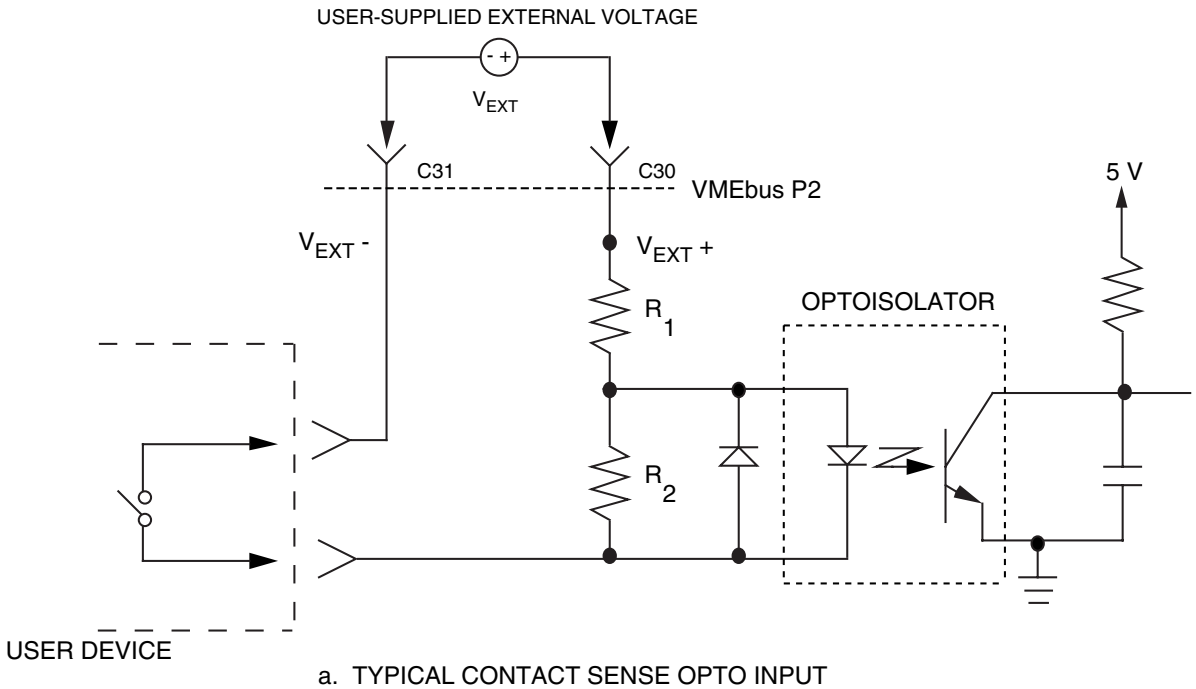
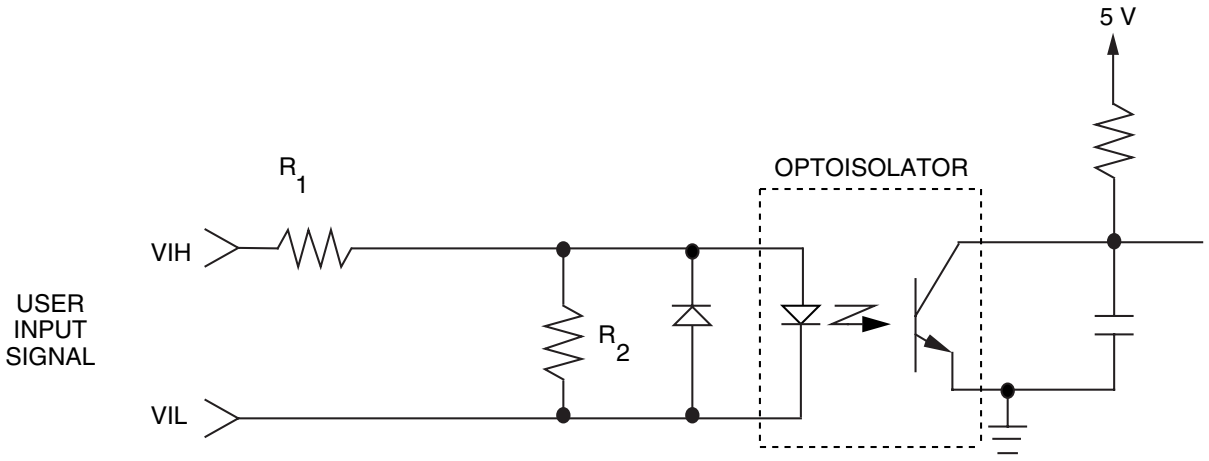


Figure 2. User Input Connection Circuit



a. TYPICAL CONTACT SENSE OPTO INPUT



b. TYPICAL VOLTAGE SOURCE OPTO INPUT

Figure 3. Typical VMIVME-1150 OPTO Input Configurations (5 to 50 V Inputs)

Table 1. 5 V Option

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
V_{INH} -HIGH THRESHOLD VOLTAGE	————	3.6	2.6	—	V
V_{INL} -LOW THRESHOLD VOLTAGE	————	—	2.6	1.8	V
I_{INH} -HIGH THRESHOLD VOLTAGE	VIN = 5 VDC	—	—	3.1	mA
I_{INL} -LOW THRESHOLD VOLTAGE	VIN = V INL (MIN)	—	—	0.7	mA

Typical turn-on current is 1.43 mA at VIN = 2.6 V.
Absolute maximum input voltage is ±12 VDC.

Table 2. 12 V Option

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
V_{INH} -HIGH THRESHOLD VOLTAGE	————	9.2	5.9	—	V
V_{INL} -LOW THRESHOLD VOLTAGE	————	—	2.6	3.4	V
I_{INH} -HIGH THRESHOLD VOLTAGE	VIN = 12 VDC	—	—	3.4	mA
I_{INL} -LOW THRESHOLD VOLTAGE	VIN = V INL (MIN)	—	—	0.7	mA

Typical turn-on current is 1.43 mA at VIN = 5.9 V.
Absolute maximum input voltage is ±22 VDC.

Table 3. 24 V Option

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
V_{INH} -HIGH THRESHOLD VOLTAGE	————	21.3	12.9	—	V
V_{INL} -LOW THRESHOLD VOLTAGE	————	—	12.9	6.9	V
I_{INH} -HIGH THRESHOLD VOLTAGE	VIN = 24 VDC	—	—	2.9	mA
I_{INL} -LOW THRESHOLD VOLTAGE	VIN = V INL (MIN)	—	—	0.7	mA

Typical turn-on current is 1.43 mA at VIN = 12.9 V.
Absolute maximum input voltage is ±34 VDC.

Table 4. 48 V Option

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
V_{INH} -HIGH THRESHOLD VOLTAGE	————	43.2	27.0	—	V
V_{INL} -LOW THRESHOLD VOLTAGE	————	—	27.0	13.9	V
I_{INH} -HIGH THRESHOLD VOLTAGE	VIN = 12 VDC	—	—	2.7	mA
I_{INL} -LOW THRESHOLD VOLTAGE	VIN = V INL (MIN)	—	—	0.7	mA

Typical turn-on current is 1.43 mA at VIN = 27.0 V.
Absolute maximum input is ±50 VDC.

Table 5. Logic Input Option

PARAMETER	CONDITION	MIN	TYP	MAX	UNIT
V_{INH} -HIGH THRESHOLD VOLTAGE	————	1.7	1.5	—	V
V_{INL} -LOW THRESHOLD VOLTAGE	————	—	1.5	1.3	V
I_{INH} -HIGH THRESHOLD VOLTAGE	VIN = 5 VDC	—	—	19.0	mA
I_{INL} -LOW THRESHOLD VOLTAGE	VIN = V INL (MIN)	—	—	0.7	mA

Typical turn-on current is 1.43 mA at VIN = 1.5 V.
Absolute maximum input is ±6 VDC.

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