

VMIVME-3459 32-Channel 6U Form Factor Surge Protected Interface Board for the VMIVME-1182 and -2210 Boards

- Meets the ANSI/IEEE C37.90.1-1989 surge withstand capability (SWC)
- 6U form factor permits installing the board in a standard VMEbus chassis
- Cables directly to a VMIVME-2210 relay output board
- Cables directly to a VMIVME-1182 digital input board
- 120 mA overcurrent protection

APPLICATIONS

- Data acquisition systems
- Nuclear power plant monitoring
- Control systems

FUNCTIONAL CHARACTERISTICS

INTRODUCTION — The VMIVME-3459 accepts discrete wire inputs via a Harting shell connector cable, provides surge withstand capability (SWC) to each channel, and provides an IDC mass-terminated cable output to a VMIVME-1182 or VMIVME-2210 board.¹

Each channel is protected with a transient suppressing diode capable of withstanding the 3,000 V decaying sine wave or the 5,000 V pulse stated in the SWC specification. Each common is also protected from the surge return by a 630 V spark gap. Figure 1 shows a typical channel on the surge protection board. The inputs from the field wiring comes into the board by the P3 discrete wire DIN connector provided on the front panel of the VMIVME-3459. Each channel is then routed to the surge protection circuitry and then to the output connector P4. P4 can be a mass-terminated IDC or a discrete wire DIN connector. P4 is then connected to the I/O board providing SWC protection.

VMEbus Compliance: This board has no electrical connection to the VMEbus backplane.

ELECTRICAL CHARACTERISTICS

(At +25 $^{\circ}$ C and rated power supplies unless otherwise noted.)

Outputs: Thirty-two; differential

Surge Withstand Capability: Meets the ANSI/IEEE C37.90.1-1989 surge withstand capability (SWC)

Oscillatory: This specification uses a 3,000 Vpk 1 to 1.5 MHz decaying sine wave. The sine wave is 1/2 of its initial voltage within 6 μ s. This burst is repeated every 20 ms for a period of 2 seconds. The output impedance of the source is 150 to 200 Ω .

Pulse: This specification uses a 5,000 Vpk pulse with a 10 ns rise time decaying to 1/2 of its initial voltage within 200 ns. This pulse is repeated every 20 ms for a period of 2 seconds. The output impedance of the source is 80 Ω during the initial rise time.



Interchannel Crosstalk Rejection: 80 dB minimum at 1 kHz, $R_{source} = 1,000 \ \Omega$

PHYSICAL/ENVIRONMENTAL

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

Temperature: 0 to +65 °C, operating range -25 to +85 °C, storage range

Relative Humidity: 20 to 80 percent, noncondensing

Cooling: Normal VMEbus chassis forced air circulation

Power Requirements: None

Altitude: Operation to 3,000 m

Weight (Mass): 0.7 kg maximum

MTBF: 632,000 hours (217F)

Ordering Options									
Jan. 11, 2000 800-003459-000	D	Α	В	С	-	D	Е	F	
VMIVME-3459	-	0	0	0	-				
ABC = 000 (Options reserved for future use)									
Connector Data Mass-Terminated IDC Connector Data									
PC Board Connector Cable Connector Connector Shell Housing			Panduit No. 120-964-033A Panduit No. 120-964-455E Harting No. 09 03 096 0501						
Discrete Wire Input Connector Data									
Mating Connector Female Crimp Contacts* Connector Shell Housing PC Board Connector	tor AMP No. 925486-1 Contacts* AMP No. 530151-6 Il Housing Harting No. 09 03 096 0501 nector Panduit No. 120-964-033A								
* An AMP crimp tool part number is 90301-2.									
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^{1.} Accepts all VMIVME-1182 options except -07C (220 V).



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Figure 2. A Typical System