

## AVME9440-i Isolated Digital I/O (16 inputs and 16 outputs)

These boards provide an economical method for isolating and interfacing digital I/O signals to the VMEbus. Built-in optical relays eliminate the expense of external relay panels and simplify installations. The outputs can control valves, switch counters, mechanical or optical relays, indicator lamps and more.

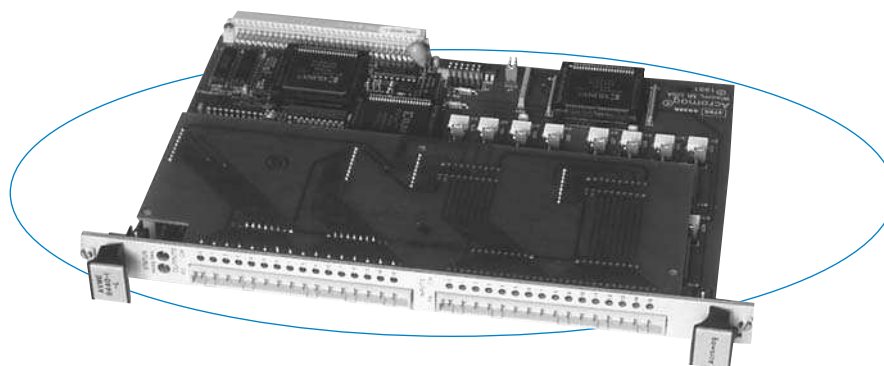
On-board relays isolate all inputs and outputs from each other and from the VMEbus for protection against transients from ground loops and pick-up.

Selectable input threshold voltages let the user adapt the input points to a variety of applications including contact closures, alarm trips, switches, and power supply on/off monitoring.

Debounce circuitry offers a selectable time delay to eliminate false signals resulting from contact bounce commonly experienced with mechanical relays and switches.

### Features

- 16 input and 16 output channels
- On-board optical relays
- All inputs and outputs are isolated from the VMEbus and from each other
- Interfaces to TTL and CMOS logic
- Optional LEDs indicate channel status
- Adjustable debounce circuitry
- Vectored interrupts for change-of-state, level (polarity), or pattern detection
- User can read back output states
- Outputs sink up to 1 Amp DC, from up to a 55V DC source



*These digital I/O boards provide isolation between individual channels and from the VMEbus for maximum protection.*

### Specifications

#### Digital Inputs

Points per board: 16.

Input voltage range (jumper-selectable):  
4 to 25V DC or 20 to 55V DC.

Input threshold:  
4V DC maximum (4 to 25V range),  
20V DC maximum (20 to 55V range).

Input current:  
18.4mA DC typical @ 25V (4 to 25V range),  
4.7mA DC typical @ 55V (20 to 55V range).

Input debounce: Jumper-selectable ranges. 7 to 8 $\mu$ S,  
336 to 384 $\mu$ S, 672 to 768 $\mu$ S, 1.344 to 1.536mS.

Input response time: 1 $\mu$ S typical (excludes debounce).

VMEbus access time: 580nS typical (all registers; measured  
from the falling edge of DSx to the falling edge of DTACK).

Logic interface: TTL and CMOS logic.

#### Digital Outputs

Points per board: 16.

Output type: Solid-state relay, Form A, Single Pole, Single  
Throw, normally open (SPST - NO).

Output voltage range: 0 to 55V.

Output voltage @ 1 Amp DC: 0.5V DC maximum.

Output current range: 0 to 1 Amp DC (0 to 40°C).

Derate current above 40°C: 10mA/°C.

Output response @ 1 Amp DC: 2.0mS maximum.

Logic interface: TTL and CMOS logic.

Output fuse: F1-16 (2 AMP).

#### Environmental

Operating temperature: 0 to 70°C (32 to 158°F).

Isolation: Each channel individually isolated via opto-couplers  
(inputs) or solid-state relays (outputs). Rated 250V AC or  
354V DC continuous from channel to channel and from  
VMEbus. Withstands 1500V AC surge for 60 seconds.

Power:

+5V DC ( $\pm$ 5%): 1.0A typical.

+12V DC: 0.0mA (not used).

Connectors:

P1: 96 pin 603-2-IEC class 2.

P2: not used.

P3, P4: Panduit No. 100-532-053; Type B male  
connectors, rows A and B equipped, even  
pins only (32 pins total).

#### VME Compliance

Meets VME Specifications per revision C.1 dated  
October 1985 and IEC 821-1987

Data transfer bus: A24/A16:D16/D08 (E0) DTB slave.

Address modifier codes: 29H, 2DH, 39H, 3DH.

Memory map: standard or short address space occupying  
1K byte.

Interrupts: I(1-7) request levels; single or multiple interrupt  
vectors; priority, sense and enabling are under software  
control.

### Ordering Information

#### I/O Boards

##### AVME9440-i

16 inputs, 16 outputs (32 channels)

##### AVME9440-i-L

Same as AVME9440-i plus LEDs

#### Software (see Page 81)

##### 90SW-API-VXW

VxWorks® software support package

#### Accessories (see Page 87)

##### 6985-16DI

Isolated digital I/O panel, 16 output channels

##### 6985-16DI

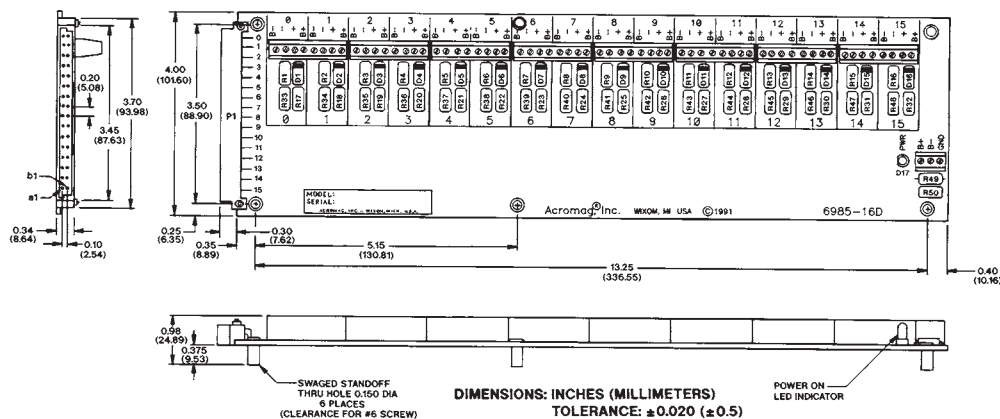
Isolated digital I/O panel, 16 output channels

##### 9944-x

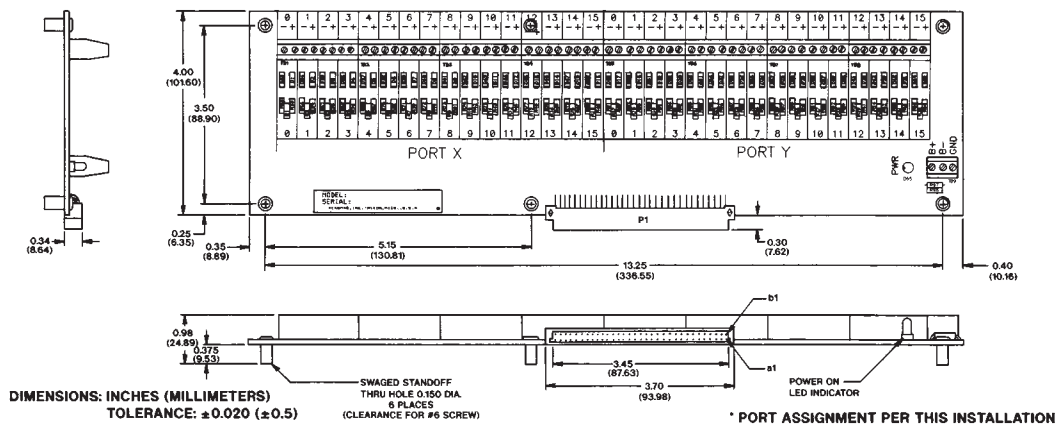
Cable, 64-pin female connectors at both ends.

Links VME board front connector to 6985-16D panel.  
Specify length, x, in feet (12 feet max).

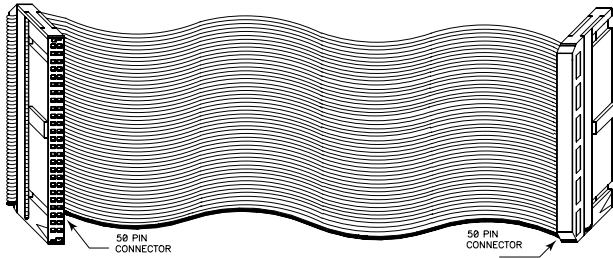
## 6985-16DI and 6985-16DO Termination Panels



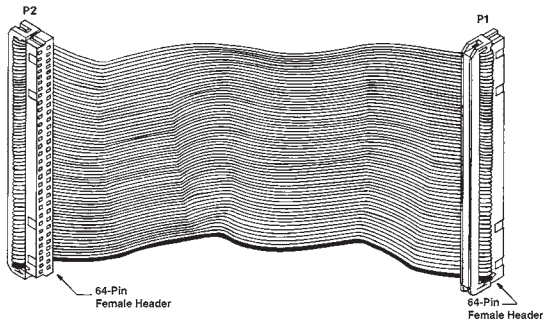
## 6985-32DI and 6985-32DO Termination Panels



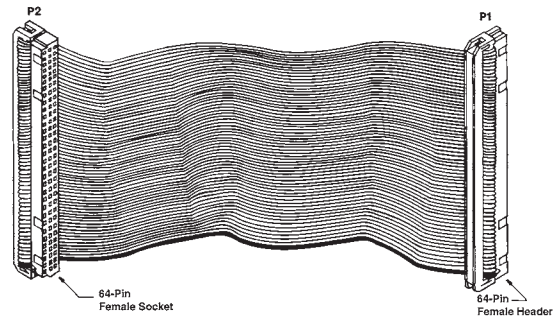
## 5025-550/551 Cable



## 9944 Cable



## 9948 Cable



## 5028-187 Cable

