

**MSTB 008:**  
**Digital Termination Board**

**Analog Accelerator Series**  
**Microstar Laboratories, Inc.**

Version 1.3

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Microstar Laboratories, Inc.  
2265 116 Avenue N.E.  
Bellevue, WA 98004  
Tel: (425) 453-2345  
Fax: (425) 453-3199

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Part Number MSAMTB008-0900-01

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## **MSTB 008 Digital Termination Board**

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The Microstar Laboratories Digital Termination Board, part number MSTB 008, is a 72-point quick-connect termination board for digital signals. It provides access to the Data Acquisition Processor digital I/O connector. The Digital Termination Board also provides ground reference connections and +5 volt and ground power connections.

MSTB 008 provides 16 digital input channels and 16 digital output channels. The number of digital input channels can be expanded to 128 and the number of digital output channels can be expanded to 1024 by using multiple Digital Termination Boards in conjunction with Digital Expansion Boards.

Several models of Digital Termination Boards currently are available from Microstar Laboratories. Digital Termination Boards can be stand-alone or can be used in a single-board enclosure. Contact your Microstar Laboratories product supplier for more information about available options.

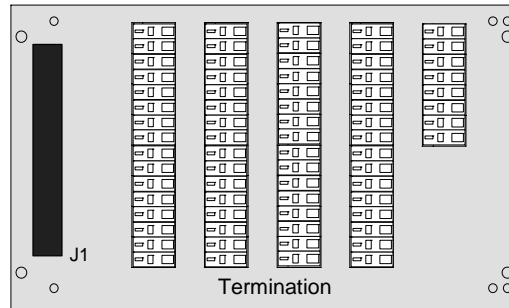
## Hardware Configuration

The Digital Termination Board is connected to the Data Acquisition Processor with a 100-line ribbon cable, part number MSCBL 036-01. This cable joins connector J1 of the Digital Termination Board to connector J1 of the Data Acquisition Processor.

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**Note:** The Digital Termination Board should not be connected or disconnected while the Data Acquisition Processor is powered.

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*Figure 1. MSTB 008 Connector Locations*

All input connections are labeled DI<sub>x</sub>, where *x* is the input number; *x* ranges from 0 to 15. Each input connection has an adjacent ground connection, labeled GND.

The inputs are ALS TTL; they sink no more than 20 microamps for a “1” input and source no more than 0.2 milliamps for a “0” input. An input voltage greater than 2 volts is interpreted as a “1” and an input voltage less than 0.8 volts is interpreted as a “0.”

Digital input pins may have signals applied when the Data Acquisition Processor is off.

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**Note:** If a voltage greater than 5 volts or less than 0 volts is applied to an input, damage to the Data Acquisition Processor may occur.

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All output connections on the Digital Termination Board are labeled DO<sub>x</sub>, where *x* is the output number; *x* ranges from 0 to 15. Each output has an adjacent ground connection, labeled GND. The outputs are ALS TTL; they can sink no more than 24 milliamps for a “0” output and can source no more than 2.6 milliamps for a “1” output. The output voltage for a “1” is at least 2.4 volts and the output voltage for a “0” is at most 0.5 volts.

All input and output ground connections are electrically connected to the Data Acquisition Processor ground. All signals connected to a Digital Termination Board must share the PC’s ground as a common reference.

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**Note:** If the output current exceeds maximum ratings, damage to the Data Acquisition Processor may occur.

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The Data Acquisition Processor internal input clock and output clock outputs are available on MSTB 008. Digital expansion control signals also are available. The connections are labeled as follows:

- ICLK = Input Clock Output
- OCLK = Output Clock Output
- DX0–DX2 = Digital Expansion Control Signals

The Digital Termination Board also has connections for the Data Acquisition Processor +5-volt power supply. The 5-volt supply has one connection on the Digital Termination Board, which is labeled +5V; the maximum 5-volt supply current is rated at 500 milliamps.

## Optional External Enclosure

The MSTB 008 Digital Termination Board is available with a single-board enclosure option. The external enclosure provides shielding and is compatible with the European Community directive 89/336/EEC.

The single-board enclosure has two possible standard end panels: blank and BNC connectors. When ordered with a blank end panel, the user creates the termination points. When ordered with a BNC end panel, signals are connected to the Digital Termination Board through BNC connectors.

For the MSTB 008, the BNC-connectors are not pre-wired. The BNC end panel has space for 20 BNC connectors that the user can configure.

Wires are pre-soldered to the BNC connectors. To connect a BNC to the Digital Termination Board, clamp the wire from the BNC connector into the appropriate Digital Termination Board connector.