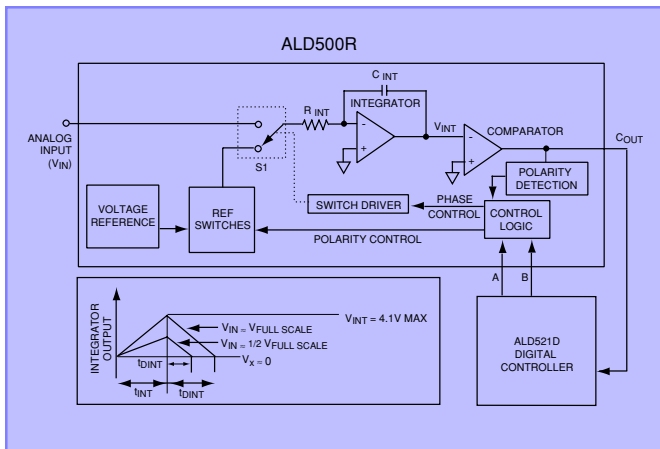


MB1S Series

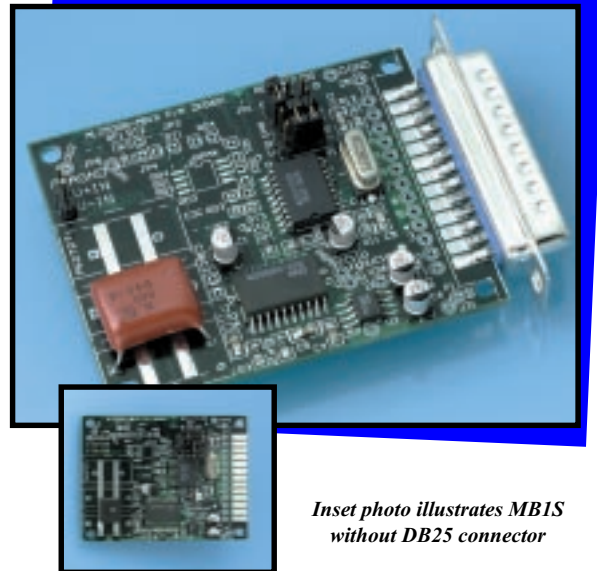
The ALD MB1S is a precision $\pm 5 \frac{1}{2}$ -digit volt meter (DVM) board that plugs directly into the parallel printer port of a PC computer. It can be also used in the stand-alone mode for a variety of embedded DC voltage measurement or monitoring applications. When interfaced to a PC computer, the measured value is displayed as a virtual digital panel meter on a PC monitor. Operating power is obtained from the PC via the parallel printer port. Ready-to-use DOS based DVM software is provided on a floppy disk for easy uploading. In the stand-alone mode, an external 5 volt DC power supply is required to interface with the 3-wire, 24-bit serial digital output.

This cost-effective DVM module offers the convenience and functionality of a precision, low voltage level 5-1/2 digit voltmeter whose display resolution, conversion rates and digital calibration can be set under software control. Accuracy is maintained by the design with state-of-the-art CMOS components and low drift technology. This software provides for calibration using your own precision calibration standards. The default reading rate is typically set at 2.5 samples per second, although a wide range of rates from 1-15 samples per second can easily be set up for specific applications.

ALD's 18 bit plus sign integrating dual slope analog processor (ALD500R) IC functions as the principal engine for the DVM module. The ALD521D controller IC implements the digital conversion, control mode and I/O functions.



Functional Block Diagram



Inset photo illustrates MB1S without DB25 connector

DVM Module Features

- Measurement Range: $\pm 2.00000V$ direct input. (Other ranges are user configurable)
- Self-powered from PC computer or external + 5 VDC power source.
- Accuracy $\pm 0.01\%$, Linearity of 0.005% full-scale.
- All solid state construction.
- 24 bit serial output.
- Differential analog inputs with auto-polarity and auto-zero.
- Simple to install and operate - includes software.
- User configurable software & hardware parameters
- Provision for input voltage scaling attenuator network.

PC Based Software Features

- Up to 6-1/2 digit display with Smart (Intelligent Adaptive) Filtering.
- User selectable $\pm 3\frac{1}{2}$ to $\pm 6\frac{1}{2}$ digit DVM
- Two display modes: DVM Window mode and Engineering mode.
- Software calibration for positive and negative inputs.
- Smart (Adaptive Filtering for fast settling and accurate) displays.

Key Specifications

- Full Scale Input Range: $\pm 2.00000V$.
- Input Impedance:
1 G Ohm minimum, 100 G Ohm typical.
- Conversion Sample Rate: 3 samples per second typical (User selectable).
- Input Power Supply requirements:
+ 3.6 to + 5.5V maximum @ 6mA typical, 9mA maximum.
- Accuracy $\pm 0.01\%$; Linearity of 0.005% full-scale (23 degrees C, ± 1 degree C).
- Logic Compatibility: CMOS inputs/outputs.
- Maximum Input Voltages: \pm Power Supply Voltages.
- Overvoltage Protection: Not available.

Environmental

- Operating Temperature Range:
0 to 50 degrees C.
- Storage Temperature:
-40 to +85 degrees C.
- Humidity: To 90% (no condensation).
- Protection: No shielding - open board construction.

Mechanical

- Outline Dimensions:
2.00 in. x 2.40 in. x 0.5 in.
- Mounting Holes: 0.125" diameter - 4 places.
- Weight: 1 ounce (28 grams).

Ordering Information *

- ALDMB1S (includes DB25 connector)
- ALDMB1S-ND (DB25 connector not included)

* For special requirements contact factory.

Applications

Applications for the DVM module include PC based digital panel meters, embedded customized/specialized precision analog front-end input for PC-based controllers and signal conditioners, laboratory datalogging, process monitors, portable/field troubleshooting and calibration.

Advanced Linear Devices, Inc. develops and manufactures a full line of precision CMOS linear integrated circuits, including analog switches, A/D converters, voltage comparators, operational amplifiers, conventional and EPAD[®] MOSFET transistors.

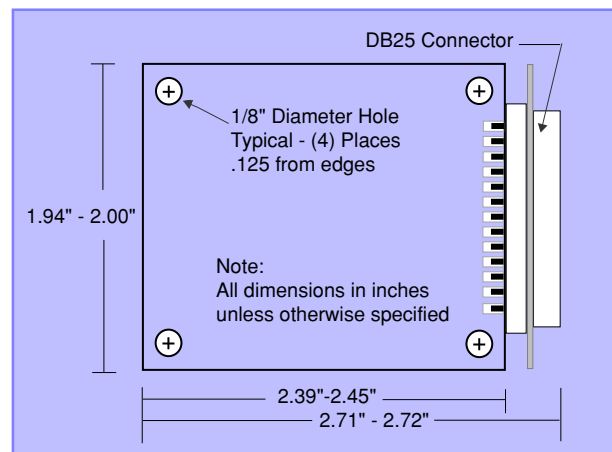
Most standard devices are available as ASIC cells for the development of semi-custom integrated circuits.

ALD also serves customers through expertise in full custom design engineering, including device and process development.

Configuration & Outline Drawing

The PC version MB1S assembly is packaged as a printed circuit board, which includes a DB25 pin connector that plugs directly into the parallel printer port of a desktop or laptop PC computer.

The embedded microcontroller version MB1S-ND has cable ready connection for digital interface to the user's system board. Other optional configurations are also available i.e., IC chipset, modified DVM modules and custom PC boards for special embedded applications.



MB1S Outline Drawing