

ACE100 Evaluation Kit For ADC100 Series A/D Converters

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FEATURES

- o MENU DRIVEN DEMONSTRATION SOFTWARE THAT IS IBM PC/XT/AT COMPATIBLE
- o BENCHTOP EVALUATION BOARD (5" X 5")
- o SERIAL AND ANALOG INPUT CABLES INCLUDED
- o LISTING OF BASIC PROGRAMS
- o ASSEMBLY DRAWINGS AND SCHEMATIC
- o 2 HIGH PRECISION REFERENCES INCLUDED ON THE BOARD
+/- 5V AND +/- 10V

DESCRIPTION

The ACE100 is a complete system for evaluating Thaler's ADC100 series of Analog to Digital Converters. By eliminating bread-boards and prototypes, evaluation and design-in cycle times are reduced.

The A/D converter that the user is interested in evaluating must be specified separately and will be installed in the board at the factory and calibrated.

The evaluation board is 5" X 5" and is designed to be set on the table next to an IBM compatible computer. Connections to the evaluation board have been minimized to a DB-9 serial cable, power supply inputs (+5,+15, -15, GND), and analog inputs for the ADC.

The DB-9 serial cable and shielded analog input cable are provided with the kit. The evaluation board also has 2 Thaler high precision references (± 5 V or ± 10 V) that can be used as inputs to the ADC.

The power supply inputs require banana plug terminations to mate with the receptacles on the evaluation board. See figure 1 for the ACE100 component layout.

The evaluation software is written in QUICK BASIC and is provided on a 3 1/2" floppy disk. The program can be read on screen by listing the ACE100PA.BAS file.

The BASIC software is menu driven and provides the user with a complete selection of options for evaluating the A/D converter. Data collection to an ASCII file is available for individuals who prefer to use stand alone statistical packages for data analysis.

GETTING STARTED

The ACE100 Evaluation Kit includes the following items:

- 1) Evaluation Board
- 2) DB-9 Serial Cable
- 3) 4 Pin DIN Analog Input Cable
- 4) 3 1/2" Floppy Disk With BASIC Program
- 5) ADC Data Sheet
- 6) ACE100 Data Sheet

ACE100 SETUP:

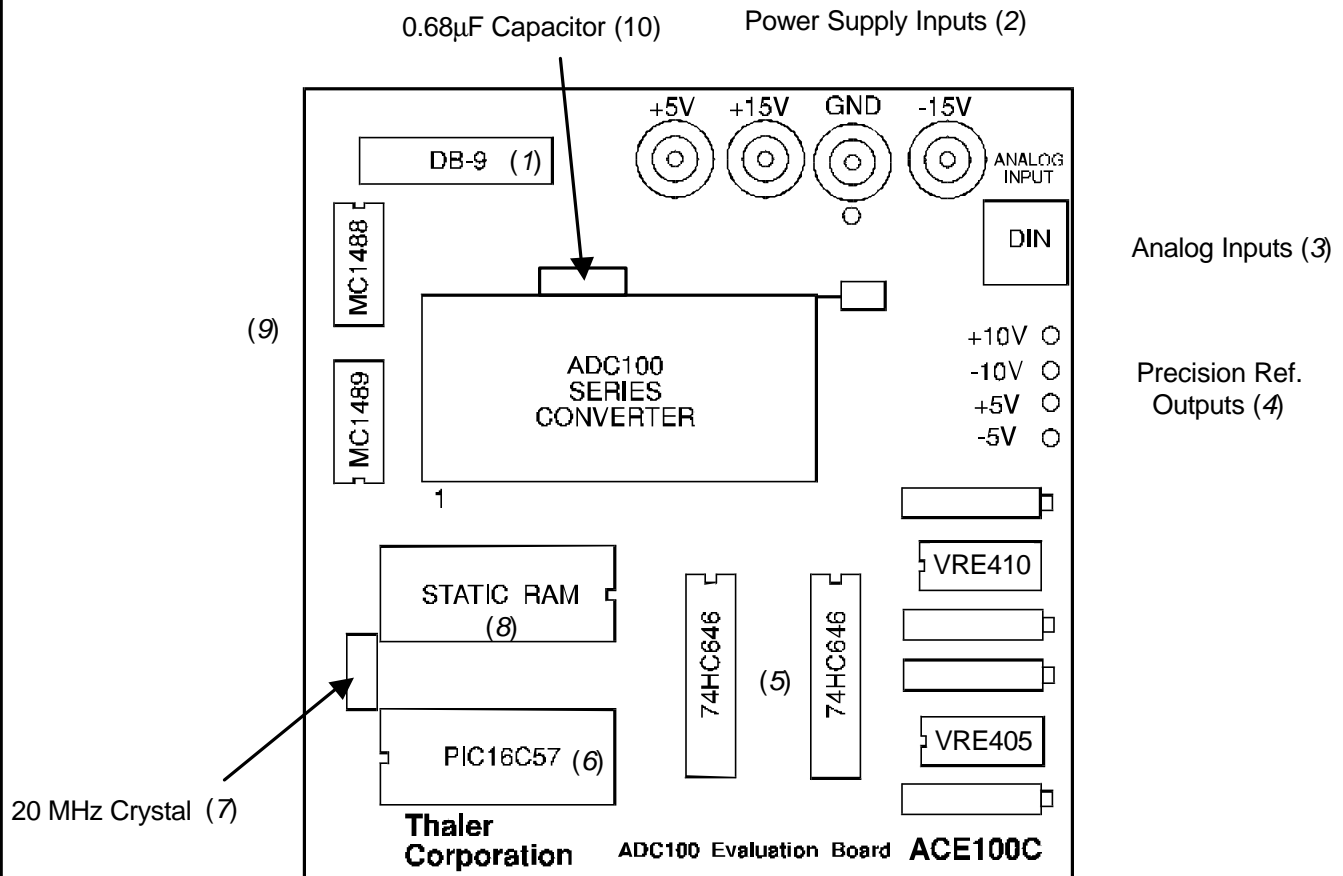
- 1) Connect the DB9 serial cable to the computer and the ACE100 board.
- 2) Connect the 4 Pin DIN Analog input cable to ACE100 board.
- 3) Connect the power supply inputs to the ACE100 board.
- 4) Turn on the power supply and let the ACE100 warmup for 5 minutes.
- 5) There are 2 files on the floppy disk, ACE100PT.BAS and QBASIC. If the computer has a hard disk, the files can be copied and executed from the hard disk.
- 6) To start the software, type QB ACE100PT to load the BASIC software.
- 7) Hit the F5 key to start the program. The ACE100 main menu will appear.
- 8) Enter the selection for the converter type then follow the subsequent menus.
- 9) The scale factor for the ADC's is set in the Basic program. The adjustment can be found in the SCALEADJ subroutine for the ADC100/150 converters. The ADC180 converter is in the SCALEADJ180 subroutine.

ADC150 Application Note:

The ACE100PT software enables the user to easily check out the different modes that the ADC150 can be operated in.

When an autozero is performed, the ADC150 microprocessor is reset. After startup, the ADC150 is configured with the default mode settings (ie. 22 Bits, 60 Hz., etc.) If a different mode is required, it must be set after the autozero has been performed.

FIGURE 1. ACE100 COMPONENT LAYOUT



Notes:

- 1) DB-9 serial cable is connected to the COM1 serial port of an IBM compatible computer.
- 2) Power supply inputs require banana connectors to mate with the receptacles on the board.
- 3) There are 3 lines provided for analog inputs, each is labeled with the respective input pin to the ADC. See the ADC data sheet for specifics.
- 4) Output pins for the VRE410 (± 10 V) and VRE405 (± 5 V) voltage references.
- 5) 74HC646. Bus Transceiver/ Register.
- 6) PIC16C57. Microprocessor that contains the "firmware" for the evaluation board.
- 7) 20 MHz. crystal clock. System clock for the evaluation board.
- 8) CXX58257AP-12L. 32 X 8 CMOS RAM for data storage.
- 9) MC1488, MC1489. Quad line driver/ receiver for RS232C communications.
- 10) 0.68 μ F polycarbonate integration capacitor.