

CHAPTER 2

FUNCTIONAL DESCRIPTION

The AOB2-P is a half-size card that can be installed in short I/O slots of PC/XT/AT class computers. It contains two digital-to-analog converters (DAC) and provides two independent analog output channels of 12-bit resolution. Each analog output channel can be configured for ranges of:

- 0V to +5V
- 0V to +10V
- 5V to +5V
- 10V to +10V
- 4mA to 20mA

Voltage ranges may be setup one of two ways; either by settings on two on-board jumpers or by jumpers at the output connector. The Option Selection section of this manual contains a description of how to make these selections.

Both analog output channels have a double-buffered input for single-step update and each is addressed at its own I/O location. The DACs have a two-byte (4LSB's+8MSB's) loading structure. The card is designed for left-justified data format. The analog outputs can be set up to be updated either independently or simultaneously.

Finally, AOB2-P contains automatic reset circuits which reset both D/A inputs to all zeroes at system power-on. On D/A channels set up for unipolar ranges, this automatic reset results in 0V output and on D/A channels set up for 4-20mA output, it results in 4mA output. On any D/A channels set up for bipolar ranges, this results in + Full Scale output of either +5VDC or +10VDC depending on the range selected.

Software provided with AOB2-P includes setup and calibration programs and two sample programs. The setup and calibration program provides pictorial representation and menu selection on the computer monitor. For setup, of course, it is not necessary that the card be plugged into the computer. Sample Program #1 prompts for a user-desired output voltage and then programs the board to output this voltage. Sample Program #2 will generate sine, triangle, or sawtooth waveforms.