

Model AOB2-P

2-Channel Analog Output Card



FEATURES

- 2 Analog Output Channels
- 12-Bit Resolution
- 4-20 mA Output Mode
- Independent or Simultaneous Update



DESCRIPTION

The Model AOB2-P is a half-size card that can be installed in short I/O slots of PC/XT/AT class computers. The card contains two Digital-to-Analog converters (DACs) and provides two independent analog output

channels of 12-bit resolution. Each analog output channel can be configured for one of the following ranges:

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

SPECIFICATIONS

ANALOG OUTPUTS

Number of Channels

2

Resolution

12-bits (1/4096)

Voltage Ranges (@ 5mA max)

0.0 to 5.0 VDC

0.0 to 10.0 VDC

-5.0 to +5.0 VDC

-10.0 to +10.0 VDC

Current Output Range

(w/excitation voltage 8-36 VDC)

4 mA to 20 mA

Digital-to Analog Converter IC

AD-7548

Relative Accuracy

±1 LSB (includes nonlinearity)

Offset Temperature Drift

±1 ppm/°C typ.

±3 ppm/°C max.

Gain Temperature Drift

±25 ppm/°C (with on-board reference)

±5 ppm/°C (with ext. reference)

Reference Voltage Input

±10V (2 or 4 quadrant)

Reference Input Resistance

7kΩ min., 11kΩ typ., 20kΩ max

Data Format

Left-justified, two bytes

(4 LSB's, then 8 MSB's)

Power Requirements

+5VDC @ 100mA max.

+12VDC @ 25mA max.

-12VDC @ 35mA max.

ENVIRONMENTAL

Temperature

Operating: 0° to +70°C

Storage: -55° to +125°C

Relative Humidity

5% to 95% non-condensing

Weight

4 oz.

Size

5.0" (127mm) long



PROGRAMMING

Model AOB2-P

Note that if you wish to update both D/As simultaneously, you can do so by using Base Address +4 through Base Address +7 for the operation.

The disk that is provided with the AOB2-P contains a set-up and calibration program to aid in configuring the

card. There are also sample programs included to show examples of how to access the registers. The following is a code segment in BASIC showing one way to program both DACs and update them simultaneously:

| | |
|-----------------------------|----------------------------------|
| BASEADDR%=&H300 | 'Set the base address to hex 300 |
| N=0*(4096/10) | 'N=Vout*(full scale count/full |
| | 'scale volts. |
| HIGHBYTE%=(N AND &HFF0)/16) | 'Shift right 4 bits to isolate |
| | 'the high byte. |
| LOWBYTE%=(N AND &H00F)*16) | 'Shift left 4 bits to isolate |
| | 'the low byte. |
| OUT BASEADDR%+4, LOWBYTE% | 'Load data to the buffer. |
| OUT BASEADDR%+5, HIGHBYTE% | 'Load data to the buffer |
| OUT BASEADDR%+6, LOWBYTE% | 'Load data to the buffer |
| OUT BASEADDR%+7, HIGHBYTE% | 'Update both D/A 0 and D/A 1 |
| | 'simultaneously. |

The Model AOB2-P requires eight consecutive locations in I/O memory space. The register map is as follows:

| Address | Write Function | Comment |
|---------------|-----------------|--------------------------|
| Base Addr + 0 | Ch. 0 Low Byte | |
| + 1 | Ch. 0 High Byte | Updates output of D/A 0 |
| + 2 | Ch. 1 Low Byte | |
| + 3 | Ch. 1 High Byte | Updates output of D/A 1 |
| + 4 | Ch. 0 Low Byte | Data buffer only |
| + 5 | Ch. 0 High Byte | Data buffer only |
| + 6 | Ch. 1 Low Byte | Data buffer only |
| + 7 | Ch. 1 High Byte | Updates both D/A outputs |

TERMINATION PANELS & CABLES

The AOB2-P has two types of termination panels available. The UTB is a universal termination panel that can be used with several different models of I/O cards. It has the added feature of a small breadboard area for adding any needed external circuitry. The UTB-K is the same panel with a metal enclosure. If external circuitry is not required, the 2M25DSM is a simple screw terminal panel. The 2M25DSM can be mounted on optional

SNAPTRACK® Model 2TK2D-6. The SNAPTRACK can be mounted on a DIN rail with two of the Model TKAD DIN rail adapters.

The same cable is required for either termination style, the Model K1800A. The K1800A is an 18" (457 mm) ribbon cable with a DB25-P on one end and a DB25-S on the other.



