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Digital to Analog Board



This circuit allows you to use 8 bits of digital output (available on almost all low-end DAC boards) and produce an output voltage of 0 to 10 VDC. You can use this to control devices that require a 0 to 10 V control voltage (i.e., low current). I have used this board in conjunction with a DC pulse width modulator (available from Jameco Electronics) to control high current DC lighting and vary the intensity of the light.

Miscellaneous Information:

This board uses 8 bits of digital output (5 V TTL) to give you a range of control DC voltages of 0 – 10 V. For instance, if you apply a TTL signal to terminal 1, then you will get about 40 mV at the output. Apply a TTL signal to terminal 5, you will get about 630 mV at the output. Here is a table of output voltages that I got from one of these boards:

Terminal	MV Out
1	40.6
2	79.8
3	158.2
4	315.3
5	629
6	1258
7	2516
8	5010

You can get different voltages from those listed in the table by addition. For example, by applying TTL signals to terminals 7 and 2, I would read about 2596 mV (2.596 V) at the output. Terminals 6, 7 and 8 would give me 8.784 V and to get 10 V output, I would apply a TTL signal to all terminals. Note that this can only supply currents of up to 5mA so it really only intended to provide control voltage to some other device, not drive it. If you need to control a higher current device, I would recommend using this board with a Pulse-Width Modulation Board (I use Jameco's PWM Kit # 120539) which will allow the control of several amps of power (speed control of DC motors, dimming DC lighting, etc.).

Specifications:

- Input Power: 6 – 16 VDC (12 V optimal)
- Output: 0.04 – 10 VDC at 5 mA
- Board Dimensions: 4.25 x 2.25 inches

Disclaimer:

These boards are designed for educational use only. In no circumstances should these circuit boards be used in critical situations where failure could mean injury or property damage.

For more information, contact us at:

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