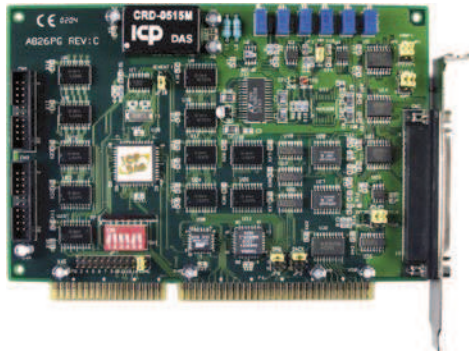


# A-826PG

16-channel 16-bit 100KS/s multi-function board



## Functional Description

The A-826PG is a multi-function, 16-bit high resolution Analog and Digital I/O board for the PC/AT compatible computers. The A-826PG offers 16-channel single-ended or 8-channel differential analog input, plus two channels of analog output with 12-bit resolution. In addition, the A-826PG has 16-channel digital input, 16-channel digital output and one timer/counter channel. The A-826PG uses a B.B. ADS 7805 high performance 16-bit A/D converter. It provides maximum sampling rate up to 100 K samples/s and software programmable gains. DMA operation is jumper-selectable for levels 1 or 3. Interrupts are jumper-selectable between 3 and 15.

## Applications

- Signal analysis
- Industrial automation
- Laboratory automation
- Sensor interface FFT & frequency analysis
- Transient analysis
- Production test
- Process control

## Specifications

### Analog Input

- Number of channels: 16 single-ended or 8 differential
- Resolution: 16-bit
- Conversion time: 8  $\mu$ s
- Maximum ADC conversion rate: 100KS/s
- Input impedance: 10,000 M $\Omega$  || 6pF
- Over voltage protection:  $\pm 35$ V
- Integral linearity error:  $\pm 3$  LSB max
- On chip sample & hold
- Accuracy: 0.01% of reading  $\pm 1$  bit
- Zero drift:  $\pm 15$ ppm/  $^{\circ}$ C of F.S. max

## Features

- 16-bit high resolution
- 100KS/s sampling rate(Max.)
- 16 single-ended or 8 differential analog inputs
- A/D trigger mode: software trigger, pacer trigger, external trigger and event trigger
- A/D data transfer modes: polling, interrupt, DMA
- Software programmable gain: 1,2,4,8
- Bipolar analog input
- 2-channel of 12-bit D/A voltage output
- 16 digital inputs & 16 digital outputs
- General purpose programmable 16-bit counter/timer

## A-826PG Input Range

| Gain | Bipolar(V)   | Sampling Rate(Max.) |
|------|--------------|---------------------|
| 1    | $\pm 10$ V   | 100KS/s             |
| 2    | $\pm 5$ V    | 100KS/s             |
| 4    | $\pm 2.5$ V  | 100KS/s             |
| 8    | $\pm 1.25$ V | 100KS/s             |

## Analog Output

- Number of channels: 2 independent
- Type: 12-bit double buffered
- Linearity: 0.006% FS
- Output range: 0~5V, 0~10V or 0~Ext Ref
- External reference: +10V or -10V max
- Output driving:  $\pm 5$  mA
- Settling time: 0.6  $\mu$ s to 0.01% for full scale step

## Digital I/O

- 16 TTL-level input
- Input low  $V_{IL}$  = 0.8V max;  $I_{IL}$  = -0.4 mA max
- Input high  $V_{IH}$  = 2.0V min;  $I_{IH}$  = 20  $\mu$  A max
- 16 TTL-level output
- Output low  $V_{OL}$  = 0.5V max; @ $I_{OL}$  = 8 mA max
- Output high  $V_{OH}$  = 2.7V min; @ $I_{OH}$  = 0.4 mA max

## Timer/Counter

- Number of channels: 1
- Resolution: 16-bit
- Compatibility: 5V/TTL
- Internal clock: 2MHz
- External clock: up to 10 MHz
- A/D pacer: cascaded 32-bit counter
- Programmable internal timer: 0.0047Hz~0.5MNz

## 16-channel 16-bit 100KS/s multi-function board



- CN2

|       |    |                                                                                     |                                                                                     |    |       |       |    |                                                                                     |                                                                                     |    |       |
|-------|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------|-------|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----|-------|
| DI 0  | 1  |    |   | 2  | DI 1  | DO 0  | 1  |  |  | 2  | DO 1  |
| DI 2  | 3  |  |  | 4  | DI 3  | DO 2  | 3  |  |  | 4  | DO 3  |
| DI 4  | 5  |  |  | 6  | DI 5  | DO 4  | 5  |  |  | 6  | DO 5  |
| DI 6  | 7  |  |  | 8  | DI 7  | DO 6  | 7  |  |  | 8  | DO 7  |
| DI 8  | 9  |  |  | 10 | DI 9  | DO 8  | 9  |  |  | 10 | DO 9  |
| DI 10 | 11 |  |  | 12 | DI 11 | DO 10 | 11 |  |  | 12 | DO 11 |
| DI 12 | 13 |  |  | 14 | DI 13 | DO 12 | 13 |  |  | 14 | DO 13 |
| DI 14 | 15 |  |  | 16 | DI 15 | DO 14 | 15 |  |  | 16 | DO 15 |
| D.GND | 17 |  |  | 18 | D.GND | D.GND | 17 |  |  | 18 | D.GND |
| +5V   | 19 |  |  | 20 | +12V  | +5V   | 19 |  |  | 20 | +12V  |

## Ordering Information

**A-826PG:** 16-channel 16-bit 100KS/s multi-function board

**A-826PG/S:**A-826PG with DB-8225

**DB-8225:** Screw terminal board with CJC

**DB-889D:** 16-channel multiplexer and signal conditioning board

**DB-16P:** 16-channel isolated digital input board

**DB-16R:** 16-channel relay board

**DN-37:** 2x37-pin connector DIN-rail mounting

terminal board

**DB-37:** 37-pin D-sub directly connector terminal board

**DN-20:** 2x20-pin header DIN-rail terminal board

**ADP-20:** 120-pin extender

|             |    |  |    |             |
|-------------|----|--|----|-------------|
| Ext Counter | 37 |  | 19 | +5V OUT     |
| N.C.        | 36 |  | 18 | N.C.        |
| COUT1       | 35 |  | 17 | Ext Trig    |
| CGATE1      | 34 |  | 16 | COUT0       |
| CGATE0      | 33 |  | 15 | D.GND       |
| D/A OUT1    | 32 |  | 14 | A.GND       |
| D/A Ref 0   | 31 |  | 13 | +12V OUT    |
| D/A OUT0    | 30 |  | 12 | D/A Ref 1   |
| A.GND       | 29 |  | 11 | int Ref Out |
| A.GND       | 28 |  | 10 | A.GND       |
| AI15        | 27 |  | 09 | A.GND       |
| AI14        | 26 |  | 08 | AI 7        |
| AI13        | 25 |  | 07 | AI 6        |
| AI12        | 24 |  | 06 | AI 5        |
| AI11        | 23 |  | 05 | AI 4        |
| AI10        | 22 |  | 04 | AI 3        |
| AI 9        | 21 |  | 03 | AI 2        |
| AI 8        | 20 |  | 02 | AI 1        |
|             |    |  | 01 | AI 0        |