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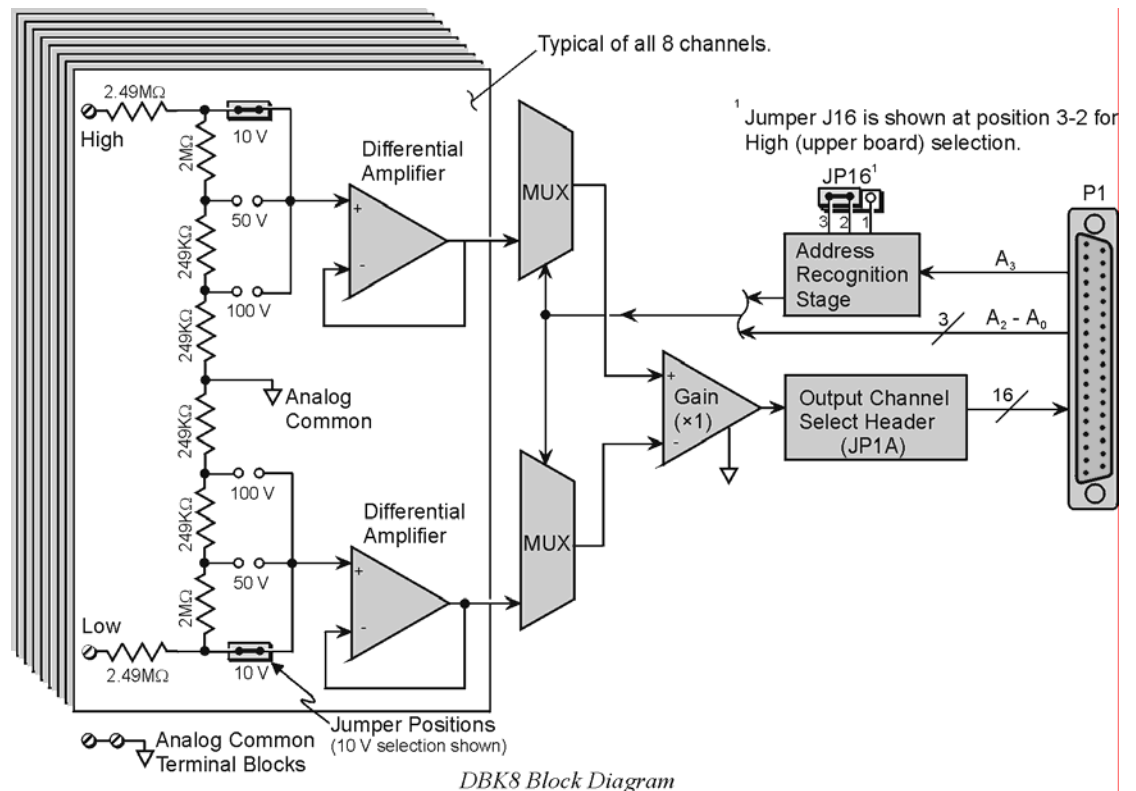
**Reference Notes:**

- Chapter 2 includes pinouts for P1, P2, P3, and P4. Refer to pinouts applicable to your system, as needed.
- In regard to calculating system power requirements, refer to *DBK Basics* located near the front of this manual.

**Note:** DBK8 has a footprint for installing a second DB37 connector, to accommodate input signals. Pins 30 to 37 correspond to channels 7 to 0; pins 11 to 18 correspond to channels 15 to 8 (or low 7 to 0 in *differential mode*). This pinout [for the footprint] is the same as P1 for the 16 main channels, with exception that the non-channel pins are not wired. Chapter 2 includes P1 pinouts.

## Overview

The DBK8 reads voltages up to  $\pm 100$  V from DC to 10 kHz. The inputs are balanced differential and referenced to the LogBook or the Daq Device analog common. No external biasing resistors are used. The input impedance of each DBK8 channel is 10 M $\Omega$  to minimize loading of the circuit being measured. Two DBK8s can share the same base channel to allow a maximum of 32 DBK8s and 256 high-voltage inputs.



Each DBK8 channel has 3 user-set voltage ranges:  $\pm 10$  V,  $\pm 50$  V, and  $\pm 100$  V. The ranges are selected by the placement of shunt jumpers on pin headers for each channel. While the channel-to-channel resistance is 10 M $\Omega$ , there is no other inherent isolation between the channels. The common of the host computer has a direct connection to the LogBook or the Daq Device analog common. Either side of any input channel is 5 M $\Omega$  from analog common.

The DBK8 has 3 attenuation factors.

- The  $\pm 100$  V range attenuates the input by a factor of 20.
- The  $\pm 50$  V range attenuates the input by a factor of 10.
- The  $\pm 10$  V range attenuates the input by a factor of 2.

**Note:** The signal coming from the DBK8 into the LogBook or Daq Device does not exceed  $\pm 5$  V.

## Hardware Setup

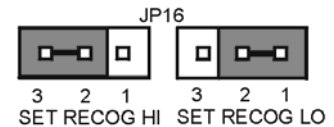
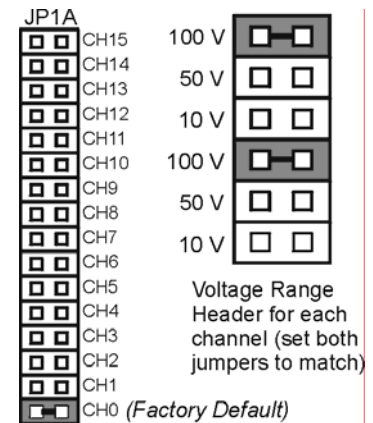
### Card Configuration

**Factory Defaults:** Voltage Range (each channel) -  $\pm 10$ V

Inputs from 1 or 2 DBK8s are multiplexed into 1 of the base channels. Channel selection is made on 2 $\times$ 16-pin header JP1A by placing the shunt jumper on the pair of pins next to the chosen base channel.

The addressing scheme allows for 16 inputs on each analog channel. The DBK8 is an 8-input card; and 2 DBK8's can use the same channel if one is configure for low channels and the other for high channels. Placing the shunt jumper on JP16 in the 2-1 position sets the card address for the lower 8 channels (0-7) in an address group. Placing the shunt jumper on JP16 in the 2-3 position sets the card address for the upper 8 channels (8-15).

Each of the 8 input channels has 3 voltage ranges that are manually selected by the placement of a pair of shunt jumpers on a channel range select header. It is important that both jumpers are placed on the same range value or incorrect voltage readings will be received by the system.



DBK8 Configuration Settings

### Card Connection

The DBK8 is equipped with screw terminal connectors for easy access to all of the analog inputs. Connections are provided for 8 pairs of inputs and 2 analog-commons. There is a high and a low terminal in each channel pair to maintain consistent polarity signs with voltage readings. For AC signals, the polarity is arbitrary unless multiple signals are being connected with an interest in channel-to-channel phase relationships. After all connections are in place, captive areas are provided at the end of the DBK8 for securing the wires to the board. Nylon tie wraps (not included) work well for this purpose.

### CE Compliance



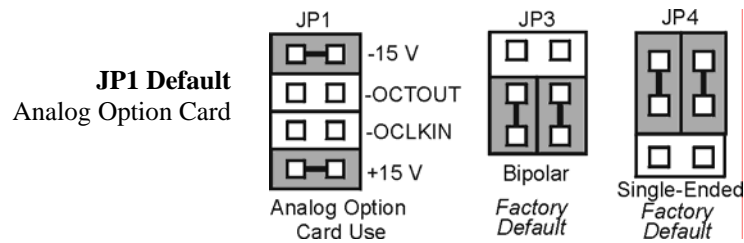
**Reference Notes:**

Should your data acquisition system need to comply with CE standards, refer to the *CE Compliance* section of the *Signal Management* chapter.

## DaqBook/100 Series & /200 Series and DaqBoard [ISA type] Configuration

Use of the DBK8 expansion card with DaqBooks/100 Series & /200 Series devices and DaqBoards [ISA type] requires 3 jumper settings.

1. If not using auxiliary power, place the JP1 jumper in the expanded analog (Analog Option Card Use) mode. This is indicated for JP1, in the following figure.



### *DaqBook/100 Series & /200 Series and DaqBoard [ISA-Type] Jumper Settings for the DBK8*

**Note:** JP1's default position is necessary to power the interface circuitry of the DBK42 via the internal +15 VDC power supply. If using auxiliary power cards DBK32A or DBK33, you must remove both JP1 jumpers. Refer to *Power Requirements* in the *DBK Basics* section, as well as to the DBK32A and DBK33 sections of the manual.

2. For DaqBook/100, DaqBook/112, and DaqBook/120 *only*, place the JP3 jumper in *Bipolar Mode*.
3. For DaqBook/100, DaqBook/112, and DaqBook/120 *only*, place the JP4 jumper in *Single-Ended Mode*.

## DaqBook/2000 Series & DaqBoard/2000 Series Configuration

No jumper configurations are required for these 2000 series devices.

## Daq Device Connection

Several options exist for placement of the DBK8 card in a system. Because the inputs can be high-voltage, the card should be physically secure and out of harm's way. DBK8 will install in the 3-position DBK10 chassis, 10-position DBK41 card cage, the card slot in either the DaqBook/112 or /216, or in a section of a *snap-in* mounting track (mounted to a secure surface), or used as an insulated holder for a loose DBK8.

## Safe Mounting

Several options exist for placement of the DBK8 card in a system. Because the inputs can be high-voltage, the card should be physically secure and out of harm's way. The DBK8 will install readily in the 3-position DBK10 chassis, the 10-position DBK41 card cage, or in a section of a snap-in mounting track mounted to a secure surface or used as an insulated holder for a loose DBK8.

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## Software Setup



### Reference Notes:

- **DaqView users** - Refer to chapter 2, *DBK Setup in DaqView*.
- **LogView users** - Refer to chapter 3, *DBK Setup in LogView*.

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## DBK8 - Specifications

**Name/Function:** 8-Channel High-Voltage Input Card

**Connectors:**

DB37 male, mates with P1  
screw terminals  
DB37 footprint, for signal inputs

**Voltage Input Ranges:**  $\pm 10$  VDC,  $\pm 50$  VDC,  $\pm 100$  VDC; selection by jumper for each channel.

**Input Impedance:** 10 M $\Omega$

**Attenuation:**

@ 10 V,  $V_{out}=V_{in}/2$   
@ 50 V,  $V_{out}=V_{in}/10$   
@ 100 V,  $V_{out}=V_{in}/50$

**Output Voltage Range:**  $\pm 5$  VDC

**Bandwidth:** 15 kHz

**Attenuation Accuracy:** 0.5%

**Offset Voltage:** Typical: 0.5 mV; Maximum: 2.0 mV

**Offset Drift :** Typical: 4  $\mu\text{V}/^\circ\text{C}$ ; Maximum: 10  $\mu\text{V}/^\circ\text{C}$

**Common Mode Rejection:**

Range	Typical	Min.
10 V	-68 dB	-55 dB
50 V	-65 dB	-53 dB
100 V	-63 dB	-51 dB