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Find the *Measurement Computing / IOtech DBK203* at our website: *Click HERE*

DBK202, DBK203, DBK204 Series

P4-to-P1 / P2 / P3 Adapters

For Analog I/O, Digital I/O, & Pulse/Frequency

For Use with DaqBook/2000 Series or DaqBoard/2000 Series Devices

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DBK203A, Rear Panel

DBK	Decription
DBK202	Screw-terminal adapter board. Board only, no chassis.
DBK203	Screw-terminal adapter module with pull-out drawer. Superseded by DBK203A.
DBK203A	Screw-terminal adapter module (supersedes DBK203). DBK203A is the most popular of these 5 DBK options.
DBK204	DBK203A plus CA-209 CE cable kit. DBK204 units shipped prior to the release of DBK203A use a DBK203.
DBK204c	DBK203A plus CA-209c CE cable kit. For use with compact PCIs and DaqBoard/2000c Series boards. DBK204c units shipped prior to the release of DBK203A use a DBK203.

Each of these units includes:

(a) P1, Analog Input, DB37 connector

(b) P2, Digital I/O DB37 connector

(c) P3, internal 40-pin header, for Digital I/O and Analog Out. The 40-pin header connects to a Pulse/Frequency DBK card, or to a module's P3 connector via a CA-60 cable. These cables have a 40-pin female connector at one end and a DB37 (37-pin) male connector at the other end.

(d) P4, 100-pin connector which includes all signals found in P1, P2, and P3, collectively.

(e) Internal, on-board, screw-terminal blocks which correlate with P1, P2, and P3

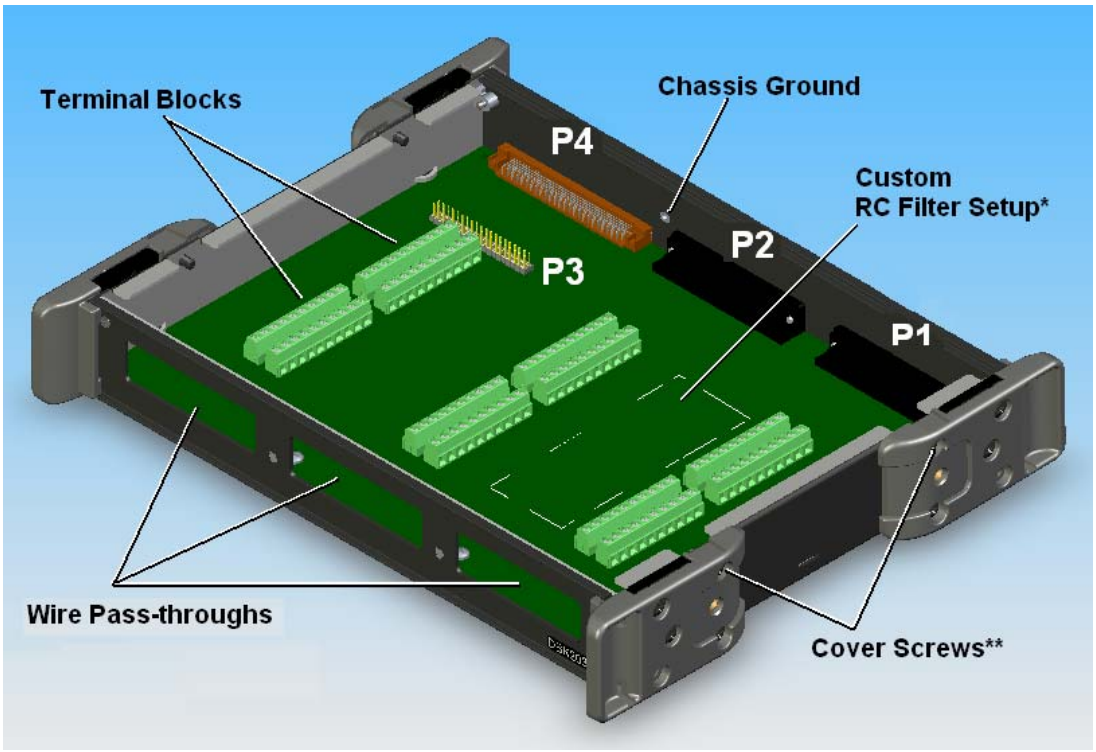
(f) Internal, on-board socket locations for custom RC Filter networks

Reference Notes:

- In regard to calculating system power requirements refer to the *DBK Basics* section.
- Chapter 2 includes pinouts for P1, P2, P3, and P4. Refer to pinouts applicable to your system, as needed.
- For a quick comparison of all DBK200 Series boards, refer to the *DBK200 Series Matrix*. The matrix is located just before the DBK200 section.
- Refer to the *DaqBoard/2000 Series User's Manual* (p/n 1033-0901) or the *DaqBook/2000 Series User's Manual* (p/n 1103-0901) for information pertaining to those products, as needed.
- The DBK213, /214, and /215 sections contain information on devices which are closely related to DBK203A.

Overview

The various part numbers [DBK202, /203, /203A, /204, and /204c] of these closely related products are described in the table on page 1. With exception of the DBK202 being a "board only," the layout for each is as indicated in the following figure.



DBK203A, Cover Plate Removed

* Custom RC Filter Setup is discussed in the section entitled, Adding Resistor/Capacitor Filter Networks, page 12.

** To remove the cover plate, remove the upper inside screw from each of the corner mounting brackets (often referred to as protective ears); then lift the plate from the unit.

The information included in this section, when combined with that found in related DBK card and DBK module sub-sections should enable you to set up your desired configuration.

It is important to note that the **DaqBoard/2000 Series** boards communicate [external from the host PC] through a 100-pin P4 connector. The P1, P2, and P3 connectors discussed in association with these boards are subset connectors of the 100-pin P4 connector. Certain **DaqBook/2000 Series** devices have both a P4 connector and a set of P1, P2, and P3 connectors on the unit. The *System Connections and Pinouts* chapter includes pinouts for both types of devices, i.e., boards and "books."

Each of the adapters discussed in this section provide a DB37 P1 connector, DB37 P2 connector, and a 40-pin "on-board" P3 header.

- P1 is used for Analog Input
- P2 for Digital I/O
- P3 for Pulse/Frequency (Digital and Counter/Timer) I/O
- P4 includes all signals found in P1, P2, and P3

In addition to these four connectors, each device includes terminal blocks designated TB1 through TB12. The screw terminal blocks tie-in to P1, P2, and P3 and provide for easy signal connection.

Screw-Terminal Adapter Board

The DBK202 Board provides a means of connecting channel input signals to a /2000 Series device through one of three methods:

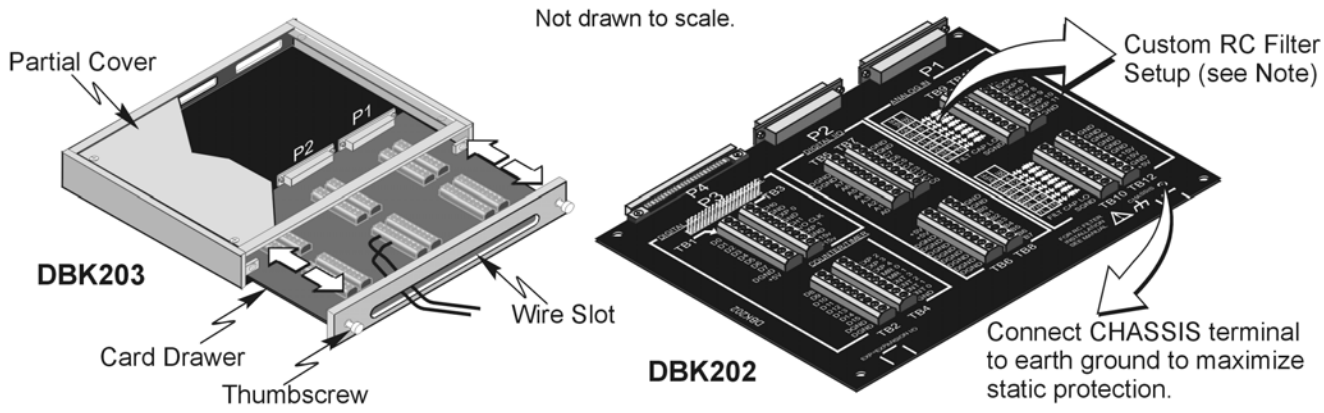
- With cables connected to P1, P2, and P3 connectors, as applicable.
- With signal wires connected to the appropriate screw-terminal blocks (TB1 through TB12). Note that the DBK202 board's silkscreen clearly identifies all screw terminals.
- With a combination of the above two methods.

When connecting a DBK202 to a P4 connector, a CA-195 cable is used. The cable has a P4 connector located at each end.

Note: DBK202 contains mounting holes that allow the board to be secured inside a user-provided enclosure.

Screw-Terminal Adapter Modules

The DBK203, DBK203A, DBK204, and DBK204c each consist of a DBK202 board housed in a chassis. The DBK203 [and DBK204 and DBK204c units that use it] include a card drawer that can be slid free of the module. The sliding card drawer provides easy access to the twelve terminal blocks and to the 40-pin P3 header. The DBK203A (which supersedes the DBK203) and the DBK204 and DBK204c units which use the DBK203A have no slide out drawer.



DBK203 Includes a Slide-Out DBK202 Board
DBK203A has no Slide-Out Option

Reference Note for Custom RC Filter Setup:
You can install resistors and capacitors to create RC networks for P1 Analog Input Channels. For detailed information, refer to *Adding Resistor/Capacitor Filter Networks*, which begins on page 12 of this DBK section.

Connection Tips

CAUTION

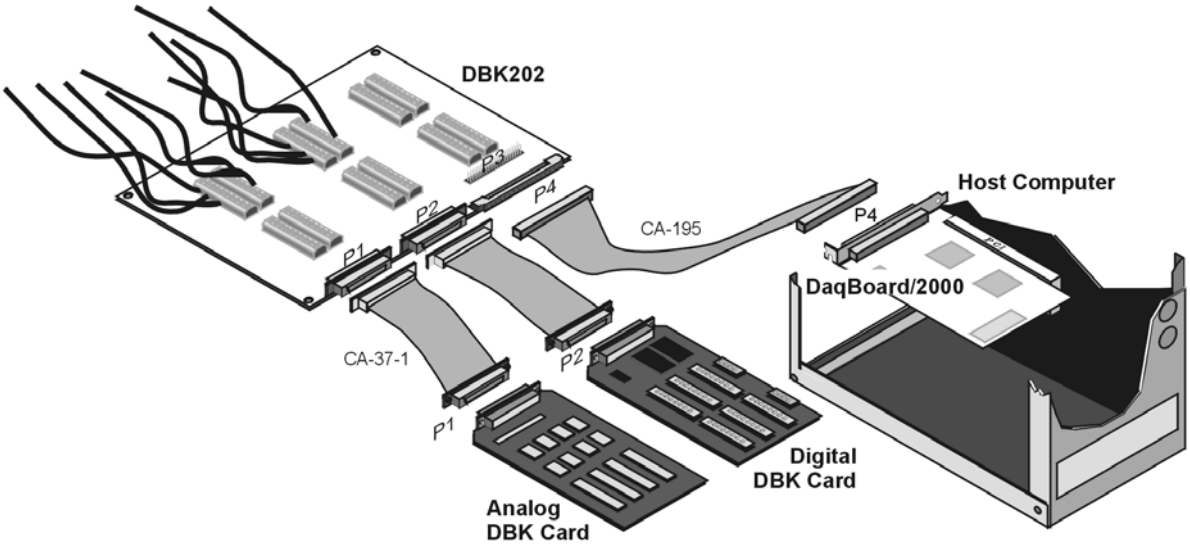
Turn off power to the host PC and externally connected equipment prior to connecting cables or signal lines to the DBK. Electric shock or damage to equipment can result even under low-voltage conditions.

Take ESD precautions (packaging, proper handling, grounded wrist strap, etc.)

Use care to avoid touching board surfaces and onboard components. Only handle boards by their edges (or ORBs, if applicable). Ensure boards do not come into contact with foreign elements such as oils, water, and industrial particulate.

Do not confuse connectors. Ensure that you only connect P1 I/Os to P1, P2 I/Os to P2, and P3 I/Os to P3. Improper connection may result in equipment damage.

Be sure to align the P4 orientation indicators (♦) prior to mating the P4 connectors.



Example of a DBK202 Connected to Analog and Digital DBK Cards via P1 and P2, Respectively

The illustrations and actual board silkscreen are the only references you should need to make proper connections.

A list of connection tips follows:

1. Ensure power is removed from the device(s) to be connected.
2. Observe ESD precautions when handling the board and making connections.
3. Do not make redundant connections. For example, for ANALOG IN you can use the P1 (DB37) connector or Terminal Blocks TB9 through TB12. You would not use both sets of ANALOG IN connectors.
4. There is no need to access the board within a DBK203, DBK203A, DBK204, or DBK204c unless you need to make connections to P3 or to a terminal block.

5. The board's 100-pin P4 connector connects to the DaqBoard/2000 P4 connector via a CA-195 Cable.

6. To obtain maximum protection from static, connect the CHASSIS terminal to earth ground.

Notes: Regarding connections to DB37 connectors and to the P3 (40-pin) header:

(a) P1 connects to an analog DBK card or module's P1 connector via a CA-37 cable.

(b) P2 connects to a Digital DBK card or module's P2 connector via a CA-37 cable.

(c) The 40-pin header (P3) connects to a Pulse/Frequency DBK card, or to a module's P3 connector via a CA-60 cable. Note that CA-60 cables have a 40-pin female connector at one end and a DB37 (37-pin) male connector at the other end.

7. To access the board, i.e., to connect to P3 or to terminal blocks:

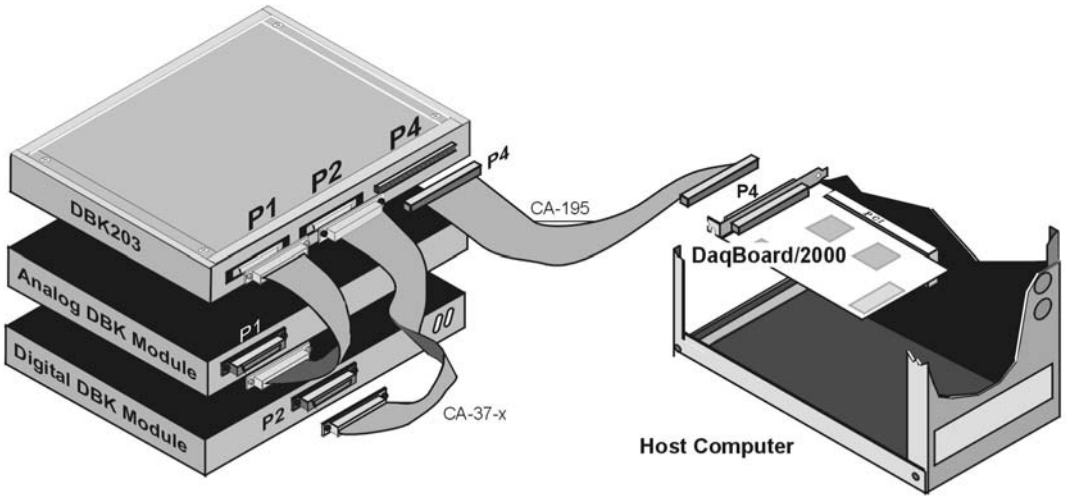
a) **DBK202** – access of the board is direct, or as determined by your own custom enclosure.

b) **DBK203** – Loosen the two thumbscrews on the front panel and slide the card drawer free of the unit.

c) **DBK203A** – Remove the upper inside screw from each of the four corner brackets (see figure, page 2) and lift the cover plate from the unit.

d) **DBK204** and **DBK204c** – Follow step 2b or 2c as applicable to your unit.

8. For DBK204 and DBK204c refer to the separate CE Cable Kit instructions that are included with the associated CE cable kit.



Example of a DaqBoard/2000 System using a DBK203 (or DBK203A)

Using Screw-Terminal Blocks

CAUTION



Turn off power to the host PC and externally connected equipment prior to connecting cables or signal lines to the DBK. Electric shock or damage to equipment can result even under low-voltage conditions.



Take ESD precautions (packaging, proper handling, grounded wrist strap, etc.)

Use care to avoid touching board surfaces and onboard components. Only handle boards by their edges (or ORBs, if applicable). Ensure boards do not come into contact with foreign elements such as oils, water, and industrial particulate.



Do not confuse connectors. Ensure that you only connect P1 I/Os to P1, P2 I/Os to P2, and P3 I/Os to P3. Improper connection may result in equipment damage.



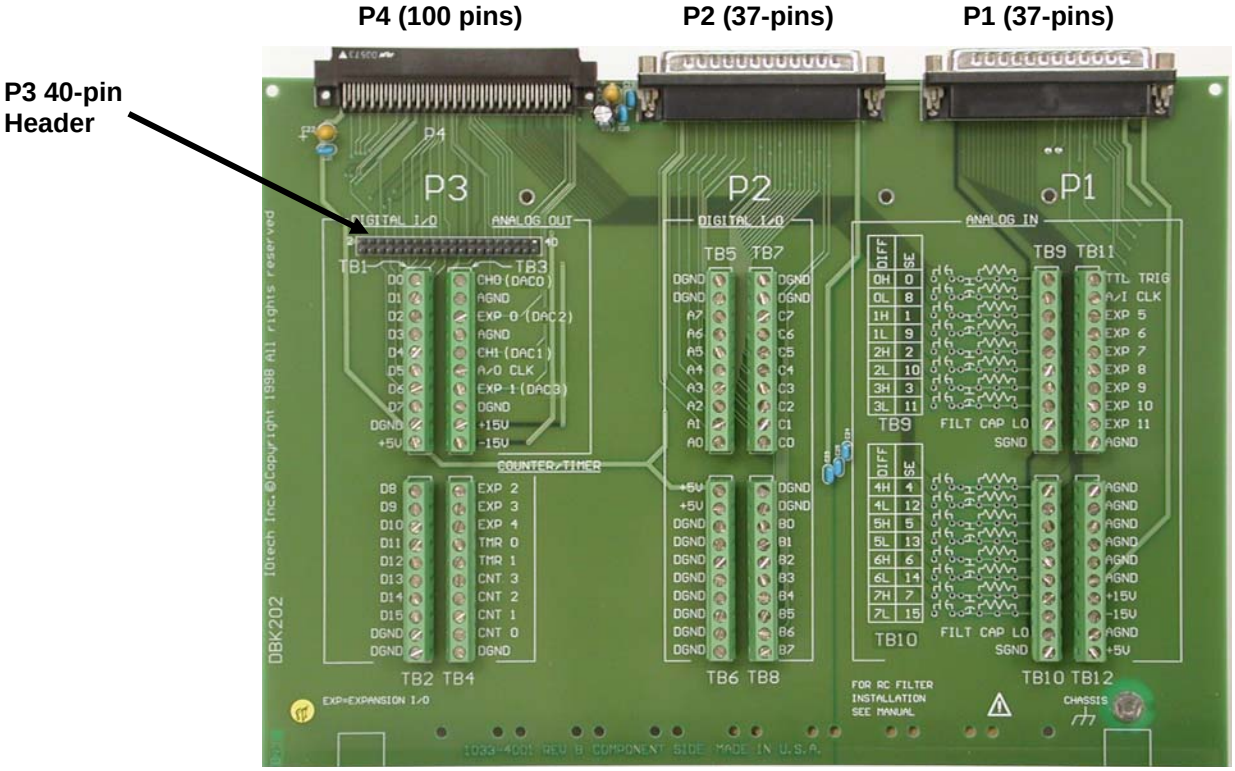
Be sure to align the P4 orientation indicators (♦) prior to mating the P4 connectors.

1. Review the preceding CAUTIONS and the P4 alignment note.
2. Access the terminal blocks:
   a) **DBK202** – access of the board is direct, or as determined by your own custom enclosure.
   b) **DBK203** – Loosen the two thumbscrews on the front panel and slide the card drawer free of the unit.
   c) **DBK203A** – Remove the upper inside screw from each of the four corner brackets (see figure, page 2) and lift the cover plate from the unit.
   d) **DBK204** and **DBK204c** – Follow step 2b or 2c as applicable to your unit.
3. Make the wiring connections to the terminals. Refer to the board's silkscreen and to the pin correlations on the next few pages.
4. Tighten the terminal block screws snug. Do not over-tighten.

In general, the following *terminal block-to-signal* relationships apply:

- **TB9**, **TB10**, **TB11**, and **TB12** are used for **ANALOG IN** and provide a connection option to the **P1** (DB37) connector.
- **TB5**, **TB6**, **TB7**, and **TB8** are used for **DIGITAL I/O** and provide a connection option to the **P2** (DB37) connector.
- **TB1**, **TB2**, **TB3**, and **TB4** are used for **Pulse/Frequency/Digital I/O** and provide a connection to the 40-pin header (**P3**).

The following pages correlate the DBK202 terminal block connectors with the associated pins of the P1, P2, and P3 DB37 connectors. Note that the *System Connections and Pinouts* chapter contains additional pin-outs, and includes references to the 100-pin P4 connector.



DBK202 Board

Correlation to P1 – Pertains to Terminal Blocks TB9, TB10, TB11, and TB12 for Analog I/O.

TB9		P1 Pin Number and Description (see Note 1)	
DIFF	**SE**		
0H	0	37	CH 0 IN (Single-Ended Mode) / CH 0 HI IN (Differential Mode)
0L	8	18	CH 8 IN (Single-Ended Mode) / CH 0 LO IN (Differential Mode)
1H	1	36	CH 1 IN (Single-Ended Mode) / CH 1 HI IN (Differential Mode)
1L	9	17	CH 9 IN (Single-Ended Mode) / CH 1 LO IN (Differential Mode)
2H	2	35	CH 2 IN (Single-Ended Mode) / CH 2 HI IN (Differential Mode)
2L	10	16	CH 10 IN (Single-Ended Mode) / CH 2 LO IN (Differential Mode)
3H	3	34	CH 3 IN (Single-Ended Mode) / CH 3 HI IN (Differential Mode)
3L	11	15	CH 11 IN (Single-Ended Mode) / CH 3 LO IN (Differential Mode)
FILT CAP LO		N/A	For RC filter networks install a wire jumper between the relevant FILT CAP LO and AGND. Note that there is no association between FILT CAP LO and P4.
SGND		19	Signal Ground, Sense Common; reference ground, not for general use.



P1 – TB9

TB10		P1 Pin Number and Description (see Note 1)	
DIFF	**SE**		
4H	4	33	CH 4 IN (Single-Ended Mode) / CH 4 HI IN (Differential Mode)
4L	12	14	CH 12 IN (Single-Ended Mode) / CH 4 LO IN (Differential Mode)
5H	5	32	CH 5 IN (Single-Ended Mode) / CH 5 HI IN (Differential Mode)
5L	13	13	CH 13 IN (Single-Ended Mode) / CH 5 LO IN (Differential Mode)
6H	6	31	CH 6 IN (Single-Ended Mode) / CH 6 HI IN (Differential Mode)
6L	14	12	CH 14 IN (Single-Ended Mode) / CH 6 LO IN (Differential Mode)
7H	7	30	CH 7 IN (Single-Ended Mode) / CH 7 HI IN (Differential Mode)
7L	15	11	CH 15 IN (Single-Ended Mode) / CH 7 LO IN (Differential Mode)
FILT CAP LO		N/A	For RC filter networks install a wire jumper between the relevant FILT CAP LO and AGND. Note that there is no association between FILT CAP LO and P4.
SGND		19	Signal Ground, Sense Common; reference ground, not for general use.



P1 – TB10

TB11	P1 Pin Number and Description	
TTL TRIG	25	TTL Trigger, Digital IN, External TTL Trigger Input
A/I CLK	20	A/I Clock, External ADC Pacer Clock Input/ Internal ADC Pacer Clock Output
EXP 5	5	Expansion 5. Digital OUT, external GAIN select bit 1
EXP 6	6	Expansion 6. Digital OUT, external GAIN select bit 0
EXP 7	3	Expansion 7. Digital OUT, external ADDRESS, select bit 3
EXP 8	22	Expansion 8. Digital OUT, external ADDRESS, select bit 2
EXP 9	4	Expansion 9. Digital OUT, external ADDRESS, select bit 1
EXP 10	23	Expansion 10. Digital OUT, external ADDRESS, select bit 0
EXP 11	26	Expansion 11. Simultaneous Sample and Hold (SSH)
AGND	*	Analog Ground, Common



P1 – TB11

TB12	P1 Pin Number and Description	
AGND	*	Analog Ground, Common
AGND	*	Analog Ground, Common
AGND	*	Analog Ground, Common
AGND	*	Analog Ground, Common
AGND	*	Analog Ground, Common
AGND	*	Analog Ground, Common
+ 15 V	21	Expansion, +15 V Power
- 15 V	2	Expansion, -15 V Power
AGND	*	Common Ground
+ 5 V	1	Expansion, +5 V Power



P1 – TB12

*Refer to Ground Correlation Tables in the *System Connections and Pinouts* chapter.

Note 1: For TB9 and TB10, the filter network portion of the silkscreen is not shown. Instead, the DIFF and SE channel identifiers have been moved next to the screws for ease in identification.

Correlation to P2 – Pertains to Terminal Blocks TB5, TB6, TB7, and TB8 for Digital I/O.

TB5	**P2 Pin Number and Description**		
DGND	*	Digital Ground, Common	 **P2 – TB5**
DGND	*	Digital Ground, Common	
A7	30	Digital I/O: P2, Digital Port A, Bit 7; or P2 Expansion Data Bit 15	
A6	31	Digital I/O: P2, Digital Port A, Bit 6; or P2 Expansion Data Bit 14	
A5	32	Digital I/O: P2, Digital Port A, Bit 5; or P2 Expansion Data Bit 13	
A4	33	Digital I/O: P2, Digital Port A, Bit 4; or P2 Expansion Data Bit 12	
A3	34	Digital I/O: P2, Digital Port A, Bit 3; or P2 Expansion Data Bit 11	
A2	35	Digital I/O: P2, Digital Port A, Bit 2; or P2 Expansion Data Bit 10	
A1	36	Digital I/O: P2, Digital Port A, Bit 1; or P2 Expansion Data Bit 9	
A0	37	Digital I/O: P2, Digital Port A, Bit 0; or P2 Expansion Data Bit 8	
TB6	**P2 Pin Number and Description**		 **P2 – TB6**
+5 V	18	Expansion +5 V Power	
+5 V	20	Expansion +5 V Power	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
TB7	**P2 Pin Number and Description**		 **P2 – TB7**
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
C7	22	Digital I/O: P2, Digital Port C, Bit 7; or P2 Expansion Data Bit 7	
C6	23	Digital I/O: P2, Digital Port C, Bit 6; or P2 Expansion Data Bit 6	
C5	24	Digital I/O: P2, Digital Port C, Bit 5; or P2 Expansion Data Bit 5	
C4	25	Digital I/O: P2, Digital Port C, Bit 4; or P2 Expansion Data Bit 4	
C3	26	Digital I/O: P2, Digital Port C, Bit 3; or P2 Expansion Data Bit 3	
C2	27	Digital I/O: P2, Digital Port C, Bit 2; or P2 Expansion Data Bit 2	
C1	28	Digital I/O: P2, Digital Port C, Bit 1; or P2 Expansion Data Bit 1	
C0	29	Digital I/O: P2, Digital Port C, Bit 0; or P2 Expansion Data Bit 0	
TB8	**P2 Pin Number and Description**		 **P2 – TB8**
DGND	*	Digital Ground, Common	
DGND	*	Digital Ground, Common	
B0	10	Digital I/O: P2, Digital Port B, Bit 0; or P2 Expansion READ Output	
B1	9	Digital I/O: P2, Digital Port B, Bit 1; or P2 Expansion WRITE Output	
B2	8	Digital I/O: P2, Digital Port B, Bit 2; or P2 Expansion RESET Output	
B3	7	Digital I/O: P2, Digital Port B, Bit 3; or P2 Expansion Address Bit 4 Out	
B4	6	Digital I/O: P2, Digital Port B, Bit 4; or P2 Expansion Address Bit 3 Out	
B5	5	Digital I/O: P2, Digital Port B, Bit 5; or P2 Expansion Address Bit 2 Out	
B6	4	Digital I/O: P2, Digital Port B, Bit 6; or P2 Expansion Address Bit 1 Out	
B7	3	Digital I/O: P2, Digital Port B, Bit 7; or P2 Expansion Address Bit 0 Out	

* Refer to Ground Correlation Tables in the *System Connections and Pinouts* chapter.

Correlation to P3 – Pertains to Terminal Blocks TB1, TB2, TB3, and TB4 for Pulse/Frequency/Digital I/O.

TB1	P3 Pin Number and Description	
D0	10	P3 Digital Port Bit 0
D1	9	P3 Digital Port Bit 1
D2	8	P3 Digital Port Bit 2
D3	7	P3 Digital Port Bit 3
D4	6	P3 Digital Port Bit 4
D5	5	P3 Digital Port Bit 5
D6	4	P3 Digital Port Bit 6
D7	3	P3 Digital Port Bit 7
DGND	*	Digital Ground, Common
+5V	20	Expansion, +5 Volt Power



P3 – TB1

TB2	P3 Pin Number and Description	
D8	29	P3 Digital Port Bit 8
D9	28	P3 Digital Port Bit 9
D10	27	P3 Digital Port Bit 10
D11	26	P3 Digital Port Bit 11
D12	25	P3 Digital Port Bit 12
D13	24	P3 Digital Port Bit 13
D14	23	P3 Digital Port Bit 14
D15	22	P3 Digital Port Bit 15
DGND	*	Digital Ground, Common
DGND	*	Digital Ground, Common



P3 – TB2

TB3	P3 Pin Number and Description	
CH0 (DAC0)	34	Analog Out; Analog DAC 0 Output
AGND	*	Analog Ground, Common; intended for use with DACs
EXP 0 (DAC2)	32	Analog Out; Analog DAC 2 Output
AGND	*	Analog Ground, Common; intended for use with DACs
CH1 (DAC1)	33	Analog Out; Analog DAC 1 Output
A/O CLK	21	Analog Out Clock; External DAC Pacer Clock Input/ Internal DAC Pacer Clock Output
EXP 1 (DAC3)	31	Analog Out; Analog DAC 3 Output
DGND	*	Digital Ground, Common
+15 V	19	Expansion, + 15 VDC
-15 V	37	Expansion, -15 VDC



P3 – TB3

TB4	P3 Pin Number and Description	
EXP 2	12	Reserved
EXP 3	13	Reserved
EXP 4	14	Reserved
TMR 0	15	P3 Timer 0 Output
TMR 1	16	P3, Timer 1 Output
CNT 3	35	P3 Counter 3 Input
CNT 2	17	P3 Counter 2 Input
CNT 1	36	P3 Counter 1 Input
CNT0	18	P3 Counter 0 Input
DGND	*	Digital Ground, Common



P3 – TB4

* Refer to Ground Correlation Tables in the *System Connections and Pinouts* chapter.

Using the P3 Header

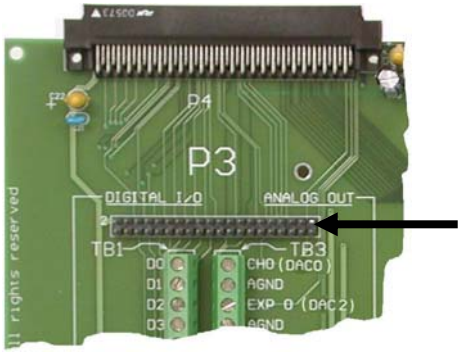
CAUTION

Disconnect the DBK202, DBK203, DBK203A, DBK204, or DBK204c from power and from signal sources prior to connecting the CA-60 cable to the 40-pin header.

Take ESD precautions (packaging, proper handling, grounded wrist strap, etc.)

Use care to avoid touching board surfaces and onboard components. Only handle boards by their edges (or ORBs, if applicable). Ensure boards do not come into contact with foreign elements such as oils, water, and industrial particulate.

Do not confuse connectors. Ensure that you only connect P1 I/Os to P1, P2 I/Os to P2, and P3 I/Os to P3. Improper connection may result in equipment damage.



P3 40-Pin Header
If you need a DB37 connector for P3, connect a CA-60 cable to this 40-pin header.

The P3 Corner Section of a DBK202

The P3 40-pin header can be used to obtain a DB37 type connector via a CA-60 cable.
To make a DB37 connector available for P3:

1. Follow the preceding CAUTIONS and ensure power is removed from the system devices.
2. Access the terminal blocks:
   a) **DBK202** – access of the board is direct, or as determined by your own custom enclosure.
   b) **DBK203** – Loosen the two thumbscrews on the front panel and slide the card drawer free of the unit.
   c) **DBK203A** – Remove the upper inside screw from each of the four corner brackets (see figure, page 2) and lift the cover plate from the unit.
   d) **DBK204** and **DBK204c** – Follow step 2b or 2c as applicable to your unit.
3. Connect the CA-60 cable to the 40-pin header.
4. Return the system to normal operation.

Reference Note:
There is no direct pin-to-pin correlation between the pins on the header and those on the DB37 connector. For P3 pinout information refer to chapter 2, *System Connections and Pinouts*.

Adding Resistor/Capacitor Filter Networks

WARNING



Disconnect the DBK202, DBK203, DBK203A, DBK204, or DBK204c from power and from signal sources prior to installing capacitors or resistors.

CAUTION



Ensure wire strands do not short power supply connections (+15 V, -15 V, +5 V, etc.) to any terminal potential. Failure to do so could result in damage to DaqBook/2000 Series devices, DaqBoard/2000 Series boards, or DaqBoard/2000c Series boards.

Do not exceed maximum allowable inputs (as listed in product specifications). There should never be more than 30 V with reference to analog ground (AGND) or earth ground.

Do not operate DBK202 on an exposed metal surface.

You must provide strain-relief (lead slack) to all leads leaving DBK202, /203, /203A, /204, or /204c. Use tie-wraps [not included] to secure strain-relief.

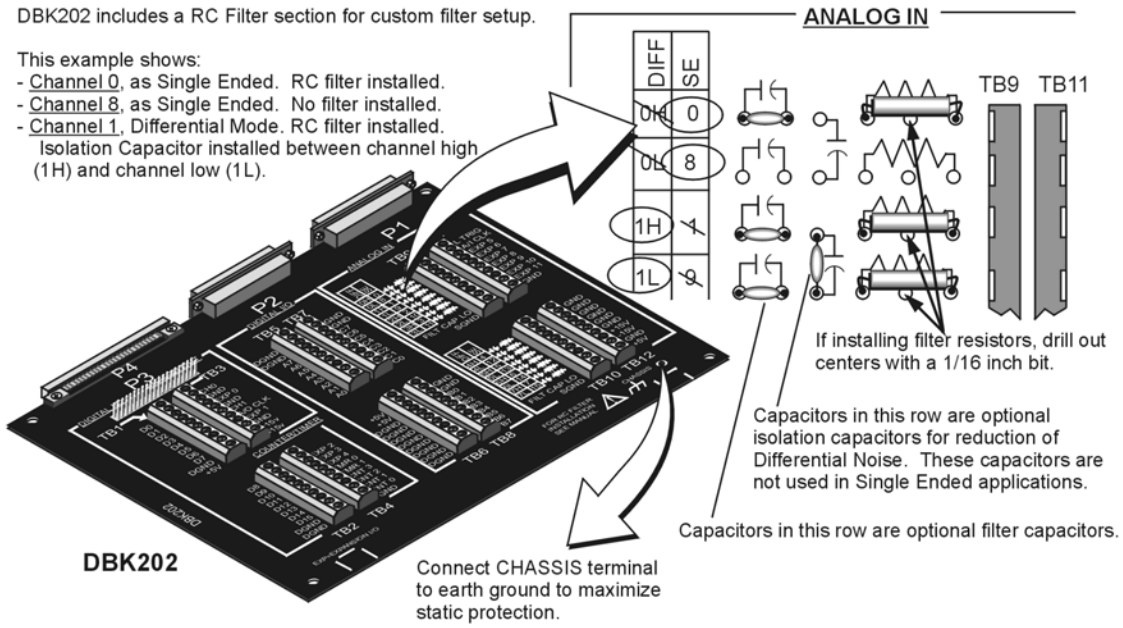
Always connect the CHASSIS terminal to earth ground. This will maximize static protection.

You can install customized RC filter networks to improve the signal-to noise ratio when an unacceptable level of noise exists. DBK202, /203, /203A, /204, and /204c include sockets for installing RC filter networks directly on the board.

The following table contains values that are typical for RC filter network components.

Typical One-Pole Low Pass Filter Values for DBK202, DBK203, DBK203A, DBK204, and DBK204c

R	C	f	f
Ohms	µF	Hertz (-3dB)	kHz (-3dB)
510	1	312	0.31
510	0.47	664	0.66
510	0.22	1419	1.42
510	0.1	3122	3.12
510	0.047	6643	6.64
510	0.022	14192	14.19
510	0.01	31223	31.22
510	0.0047	66431	66.43
470	0.0033	102666	102.67



An Example of Customer-Installed Capacitors and Filters for RC Networks on a DBK202

Prior to installing RC components, review the previous WARNING and CAUTION statements; then read over the following information regarding resistors and capacitors.

- **Do not use RC filters in conjunction with additional DBK expansion accessories.**
- **Prior to installing a resistor to the filter network you must drill a 1/16" hole through the center pinhole [beneath the board's silkscreen resistor symbol] as indicated in the above figure. Failure to do so will short-circuit the resistor.**
- **Do not drill holes on the board for channels, unless those channels are to receive a filter network (see preceding statement).**
- **Resistors should be ¼ watt, film-type with up to 5% tolerance. Do not use wire-wound resistor types.**
- **A resistor value of 510 Ω is recommended. Do not exceed 510 Ω.**
- **Capacitors used are to be of the film dielectric type (e.g., polycarbonate or NPO ceramic), above 0.001 µF.**
- **RECOMMENDED: For reduction of both *Common Mode Noise* and *Differential Mode Noise*, use one capacitor between Channel High and AGND; and use a second capacitor between Channel Low and AGND.**
- **For reduction of *Differential Noise* [when no reduction of *Common Mode Noise* is needed] position a capacitor across the respective Channel High and Channel Low.**
- **When in Differential Mode, using capacitors between Channel High, Channel Low, and AGND may cause a slight degradation of *wideband Common Mode rejection*.**
- **When making a RC filter network, always install a wire jumper between the relevant FILT CAP LO and AGND. FILT CAP LO terminals are located on TB9 and TB10.**


Notes

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