



DBK48™

16-Slot Multifunction Isolated Signal Conditioning

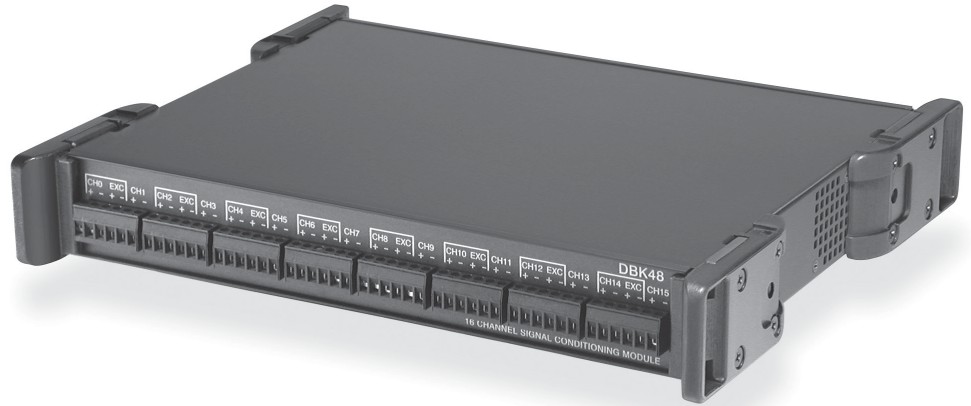


Compatibility: ✓ LogBook ✓ DaqBook ✓ DaqLab ✓ DaqScan ✓ DaqBoard/2000 Series

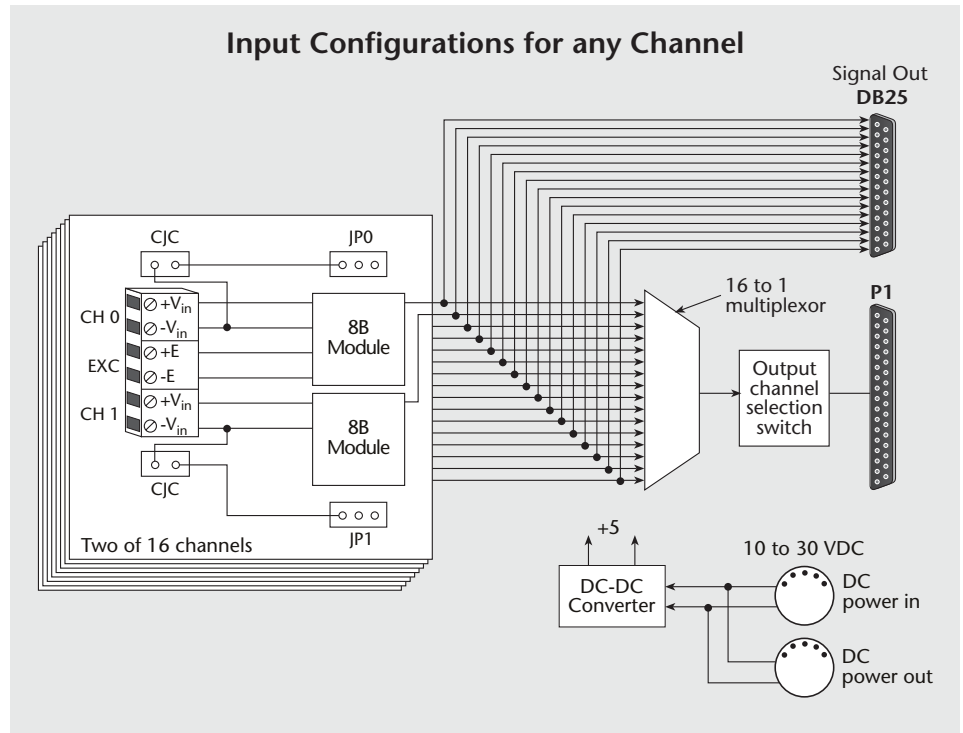
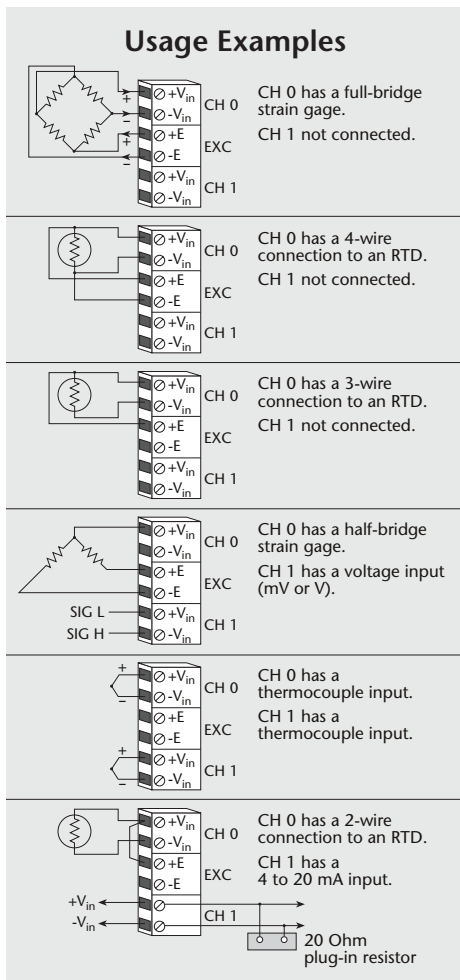
Features

- Accepts up to sixteen 8B* isolated signal conditioning modules
- Features removable screw-terminal connectors
- Offers built in cold junction compensation for thermocouple measurements

The DBK48™ signal conditioning module uses the new, low-cost 8B isolated signal conditioning modules, and provides up to 16 channels of I/O with 250V isolation from channel-to-channel. The DBK48 attaches to any of IOtech's products with a P1 expansion port, including the LogBook, DaqBook, DaqLab, DaqScan, and DaqBoard/2000 series of PCI boards**. Up to sixteen DBK48 modules can be attached to one P1 port, for a total channel capacity of 256 channels. All DBK48 channels can be scanned at 5 μsec/channel.



The DBK48 accepts up to sixteen 8B signal conditioning modules



All signal connections are accomplished via removable screw-terminal connectors on the DBK48's front panel. Cold-junction compensation is built into the DBK48, allowing any channel to be configured as a thermocouple (TC) input channel. When 2-wire signals are attached to the DBK48, such as voltage, current or TC, all 16 channels can be populated with 8B signal conditioning modules. When 3- or 4-wire

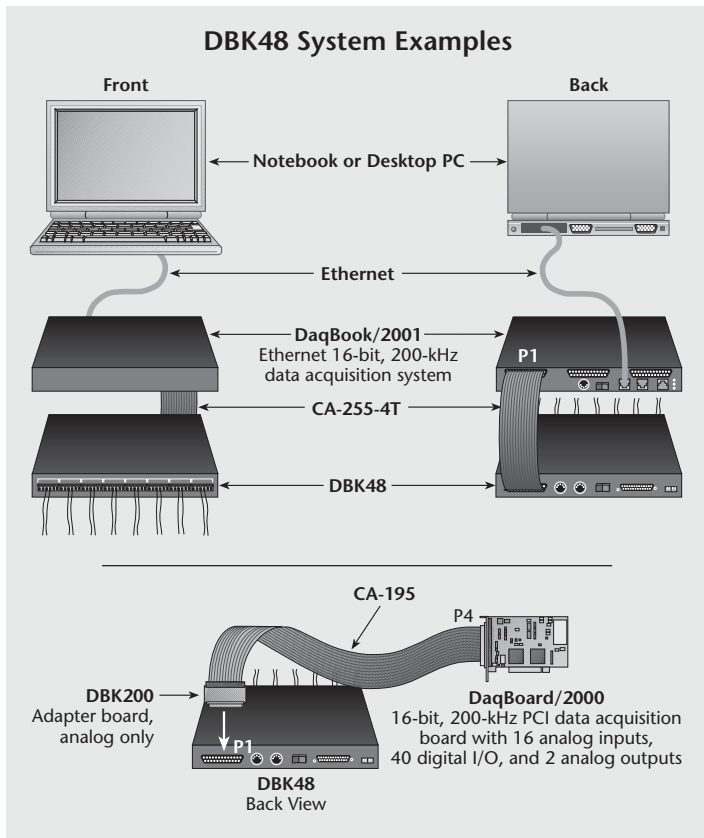
transducers are used, such as strain gages or RTDs, then the maximum number of 3- or 4-wire transducers is eight, plus an additional eight 2-wire transducers (volts, current or TC). For example, one DBK48 can be configured for 16 volts or TC inputs, or 8 strain inputs plus 8 volts or TC inputs.

* 8B modules must be purchased separately
 ** Requires an adapter for DaqBoard/2000 series



DBK48™

Specifications & Ordering Information



Signal Connections. 8 sets of removable screw-terminal blocks are on the front of the DBK48. They provide access to all 16 input channels. 8B modules generate a 0 to 5V or $\pm 5V$ output signal that is multiplexed onto the P1 analog input connector. The output signal of each 8B module is also available on a 25-pin DSUB connector located on the rear panel of the DBK48, which can be measured by any device capable of measuring a $\pm 5V$ signal.

Specifications

Operating Environment:

- Temperature: $-30^{\circ}C$ to $70^{\circ}C$
- Relative Humidity: 95% RH, non-condensing
- Vibration: MIL STD 810E Category 1 and 10
- System Connector: DB37 male, mates with P1*
- Power Connector: DIN5 x2 for daisy chaining
- Module Capacity: 16 (input only) voltage or thermocouple 8B modules, or 8 strain gage, potentiometer, or RTD 8B modules (any module requiring excitation)
- Power Requirements (8B Modules): 10 to 30 VDC with included AC adapter
- Power Consumption: 35 mW from P1
- DC Power Required: 15V @ 833 mA, 20V @ 625 mA, assuming max load, 755 mW required from P1 when used with a DaqBook
- DC Input Fuse: 2A
- Input Connections: Eight sets of removable screw terminals (6 connections each) Isolation
- Input Power to System: 250 VDC
- Signal Inputs to System: 250 VDC
- Input Channel-to-Channel: 250 VDC
- Dimensions: 285 mm W x 220 mm D x 45 mm H (11" x 8.5" x 1.75")
- Weight: 1.13 kg (2.5 lbs.) with no modules installed

Ordering Information

Description	Part No.
16-slot multifunction 8B expansion module including AC adapter	DBK48

Accessories

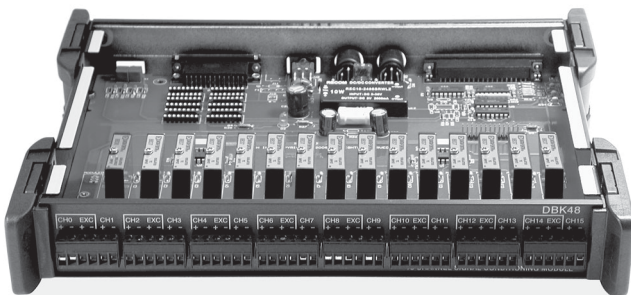
Rack mount kit	RackDBK3
8B Modules - See following page	

Cables

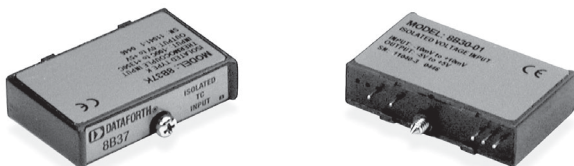
5-pin DIN to automobile cigarette lighter power cable	CA-116
Shielded T cable for use with LogBook, DaqBook, DaqLab, DaqScan, and DaqBoard; 2 in.	CA-255-2T
Shielded T cable for use with LogBook, DaqBook, DaqLab, DaqScan, and DaqBoard; 4 in.	CA-255-4T
Ribbon cable for use with LogBook, DaqBook, DaqLab, DaqScan, and DaqBoard	CA-37-x

Note: The CA-37-x ribbon cable can also be used in lieu of the CA-255-x molded T cables.

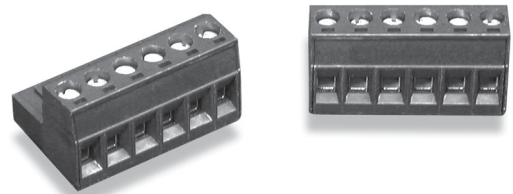
Powering the DBK48. The DBK48 is powered from a number of sources: an included AC adapter, an optional DBK30A™ rechargeable battery/excitation module, or directly from a 10 to 30V VDC source, such as an automobile battery. The DBK48 has a built-in DC/DC converter capable of providing 10W exclusively for 8B modules.



DBK48 with cover open showing 8B signal conditioning modules



8B modules allow a diverse range of signal conditioning requirements



Removable terminal blocks make wiring to your sensor easy

* Attachment to the DaqBoard/2000 series requires a DBK200, DBK201, DBK202, DBK203, or DBK206 adapter

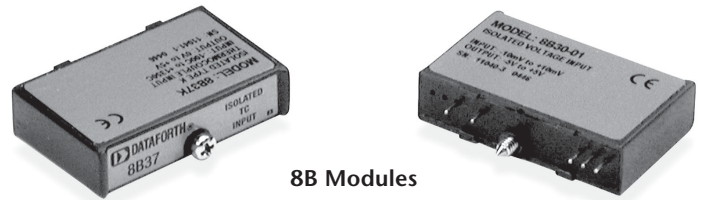


8B Module Selection Guide

for DBK48 Signal Conditioning Options



8B modules allow you to use IOtech PC-based data acquisition systems in applications with a diverse range of signal conditioning requirements. These applications include potentiometer, isolated current loop inputs, ± 10 mV to ± 60 V inputs, linearized RTD, thermocouple, and all popular strain gage configurations. The following is a complete listing of the 8B modules available for IOtech products.



8B Modules

Voltage Input Modules (3-Hz BW)

IOtech Part #	Input Range	Output Range
SC-8B30-01	± 10 mV	± 5 V
SC-8B30-02	± 50 mV	± 5 V
SC-8B30-03	± 100 mV	± 5 V
SC-8B31-01	± 1 V	± 5 V
SC-8B31-02	± 5 V	± 5 V
SC-8B31-03	± 10 V	± 5 V
SC-8B31-04	± 1 V	0 to +5V
SC-8B31-05	± 5 V	0 to +5V
SC-8B31-06	± 10 V	0 to +5V
SC-8B31-07	± 20 V	± 5 V
SC-8B31-08	± 20 V	0 to +5V
SC-8B31-09	± 40 V	± 5 V
SC-8B31-10	± 40 V	0 to +5V
SC-8B31-12	± 60 V	± 5 V
SC-8B31-13	± 60 V	0 to +5V

Current Input Modules (3-Hz)

IOtech Part #	Input Range	Output Range
SC-8B32-01	4 to 20 mA	0 to +5V
SC-8B32-02	0 to 20 mA	0 to +5V

Linearized 2- or 3-Wire RTD Modules (0 to +5V Output, 3-Hz BW)*

IOtech Part #	Type	Input Range
SC-8B34-01	100 Ω Pt	-100°C to $+100^{\circ}\text{C}$ (-148°F to $+212^{\circ}\text{F}$)
SC-8B34-02	100 Ω Pt	0°C to $+100^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+212^{\circ}\text{F}$)
SC-8B34-03	100 Ω Pt	0°C to $+200^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+392^{\circ}\text{F}$)
SC-8B34-04	100 Ω Pt	0°C to $+600^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+1112^{\circ}\text{F}$)

Potentiometer Input Modules (0 to +5V Output, 3-Hz BW)*

IOtech Part #	Input Range	Output Range
SC-8B36-01	0 to 100 Ω	0 to +5V
SC-8B36-02	0 to 500 Ω	0 to +5V
SC-8B36-03	0 to 1 k Ω	0 to +5V
SC-8B36-04	0 to 10 k Ω	0 to +5V

Thermocouple Input Modules (0 to +5V Output, 3-Hz BW)

IOtech Part #	Type	Input Range
SC-8B37-J	J	-100°C to $+760^{\circ}\text{C}$ (-148°F to $+1400^{\circ}\text{F}$)
SC-8B37-K	K	-100°C to $+1350^{\circ}\text{C}$ (-148°F to $+2462^{\circ}\text{F}$)
SC-8B37-T	T	-100°C to $+400^{\circ}\text{C}$ (-148°F to $+752^{\circ}\text{F}$)
SC-8B37-R	R	0°C to $+1750^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+3182^{\circ}\text{F}$)
SC-8B37-S	S	0°C to $+1750^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+3182^{\circ}\text{F}$)

Voltage Input Modules (20-kHz BW)

IOtech Part #	Input Range	Output Range
SC-8B40-01	± 10 mV	± 5 V
SC-8B40-02	± 50 mV	± 5 V
SC-8B40-03	± 100 mV	± 5 V
SC-8B41-01	± 1 V	± 5 V
SC-8B41-02	± 5 V	± 5 V
SC-8B41-03	± 10 V	± 5 V
SC-8B41-04	± 1 V	0 to +5V
SC-8B41-05	± 5 V	0 to +5V
SC-8B41-06	± 10 V	0 to +5V
SC-8B41-07	± 20 V	± 5 V
SC-8B41-08	± 20 V	0 to +5V
SC-8B41-09	± 40 V	± 5 V
SC-8B41-10	± 40 V	0 to +5V
SC-8B41-12	± 60 V	± 5 V
SC-8B41-13	± 60 V	0 to +5V

Linearized Thermocouple Input Modules (0 to +5V Output, 3-Hz BW)

IOtech Part #	Type	Input Range
SC-8B47-J-01	J	0°C to $+760^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+1400^{\circ}\text{F}$)
SC-8B47-J-02	J	-100°C to $+300^{\circ}\text{C}$ (-148°F to $+572^{\circ}\text{F}$)
SC-8B47-J-03	J	0°C to $+500^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+932^{\circ}\text{F}$)
SC-8B47-J-12	J	-100°C to $+760^{\circ}\text{C}$ (-148°F to $+1400^{\circ}\text{F}$)
SC-8B47-K-04	K	0°C to $+1000^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+1832^{\circ}\text{F}$)
SC-8B47-K-05	K	0°C to $+500^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+932^{\circ}\text{F}$)
SC-8B47-K-13	K	-100°C to $+1350^{\circ}\text{C}$ (-148°F to $+2462^{\circ}\text{F}$)
SC-8B47-K-14	K	0°C to $+1200^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+2192^{\circ}\text{F}$)
SC-8B47-T-06	T	-100°C to $+400^{\circ}\text{C}$ (-148°F to $+752^{\circ}\text{F}$)
SC-8B47-T-07	T	0°C to $+200^{\circ}\text{C}$ ($+32^{\circ}\text{F}$ to $+392^{\circ}\text{F}$)

Additional 8B modules will be introduced throughout 2005.
Visit www.iotech.com/8Bmod for the most recent listing.

* Available June 2005