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Find the *Measurement Computing / IOtech DBK82* at our website: *Click HERE*

DBK81, DBK82, DBK83, & DBK84

Low-Noise, High-Accuracy, Thermocouple/mV Expansion

MEASUREMENT COMPUTING

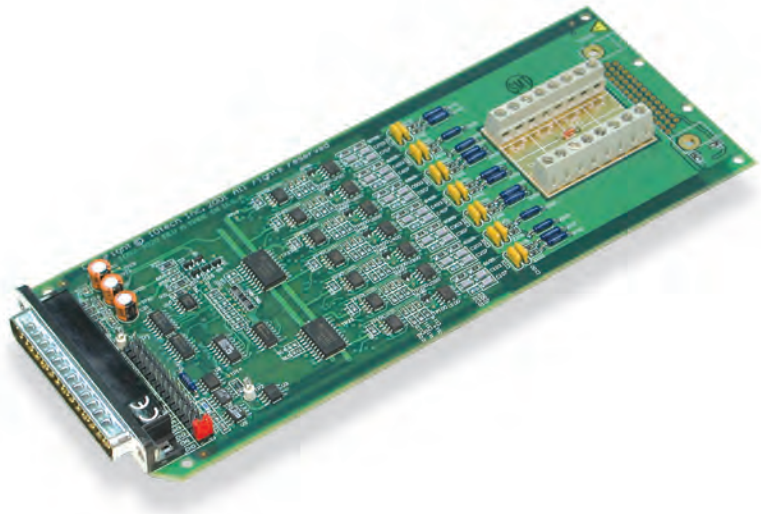
Features

- Measures type J, K, S, T, E, B, R, and N thermocouples as well as voltage up to ±100 mV
- Low noise, high accuracy, high stability
- 200 kHz maximum scan rate
- High noise immunity
- Open thermocouple detection per channel
- Over-voltage protection
- Available in four form-factors:
  - 7-channel card with on-board screw terminals (DBK81)
  - 14-channel card with on-board screw terminals (DBK82)
  - 14-channel card with external signal connection "pod" (DBK83)
  - 14-channel module, housed in a metal package with mini TC connections (DBK84)

DBK81, DBK82, DBK83, and DBK84 are designed to provide very low-noise thermocouple and milli-volt measurements, with high accuracy and very close tracking between channels. This series provides TC accuracy up to 0.8 ˚C, and noise typically less than 0.2 ˚C peak-to-peak, with no digital averaging required.

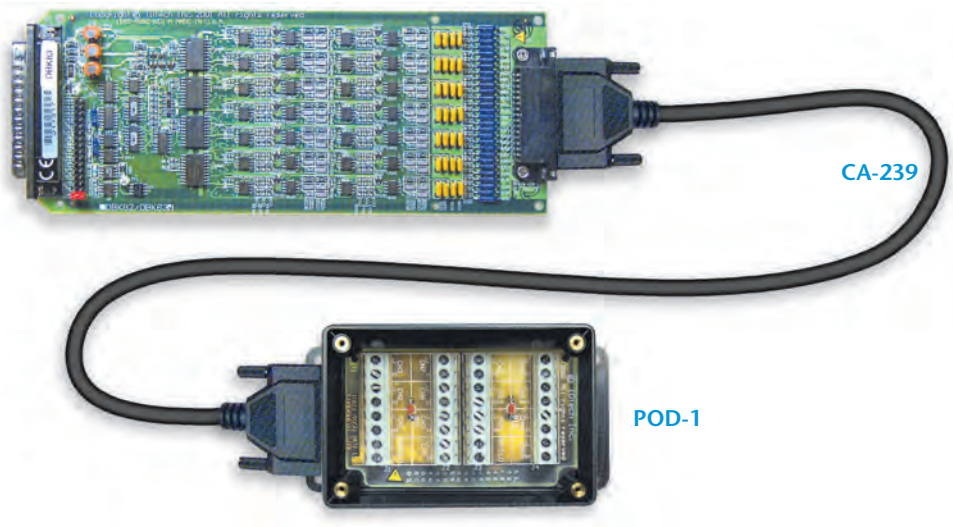
The performance of these new DBK cards is enabled through their use of very low-noise amplifiers on every channel. Built-in cold junction compensation and software-based linearization automatically provide quiet and stable temperature measurements, with no need to deal with the usual complexities associated with TC measurements.

DBK81



The **DBK81** provides 7 differential TC or mV inputs, and on-board screw terminals for connection of TC/mV signals directly to the card.

DBK83



The **DBK83** provides 14 differential channels of input (like the DBK82) and includes an external TC/mV connection pod with screw terminals. The DBK83 also allows TC connections to reside away from the A/D system, reducing the length of thermocouple wire required. The DBK83 makes it easy to remove all signal connections by disconnecting one cable from the pod. A three-foot cable is included with the DBK83.

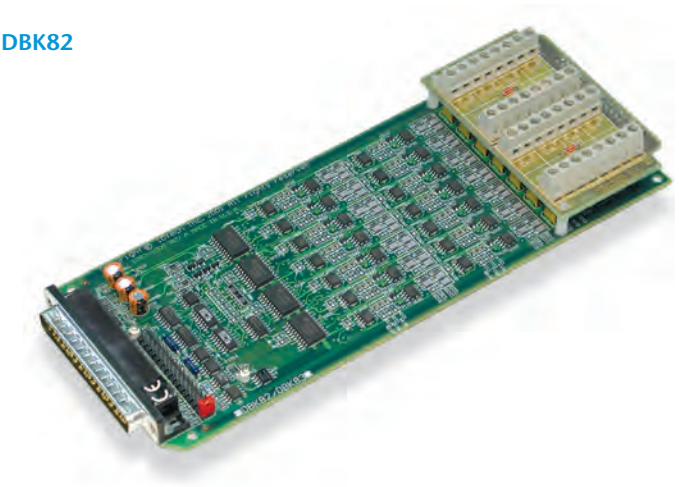
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DBK81, DBK82, DBK83, & DBK84

Specifications & Ordering Information

MEASUREMENT COMPUTING

DBK82



The **DBK82** provides 14 differential channels of TC or mV inputs, and is physically taller than the DBK81. The DBK82 installs into a DBK60, LogBook/360, or DaqLab/2000 Series, where it can be wired directly to the mini-TC connector panels (DBK605). Note that the DBK82 will not install into single-height slots on the DaqBook/2000X, or DBK10. The DBK82 consumes two expansion slots in the DBK41 10-slot enclosure.

DBK84



The **DBK84** is a 14-channel module with built-in mini-TC terminal jacks. The DBK84 can mechanically attach directly to any module or enclosure. The DBK84 is best suited for applications where mini-TC jacks are in use, and where quick attachment and removal of TCs is desired.

TC Accuracy at Measurement Temperature in ˚C (±˚C)											
Type	Min	Max	-100	0	100	300	500	700	900	1100	1400
J	-200	760	0.8	0.7	0.7	0.8	0.9	0.9	—	—	—
K	-200	1200	0.9	0.8	0.8	0.9	1.1	1.1	1.2	1.3	—
T	-200	400	0.9	0.8	0.8	0.8	—	—	—	—	—
E	-270	650	0.8	0.7	0.7	0.7	0.8	—	—	—	—
S	-50	1768	—	3.1	2.4	2.0	2.0	1.9	2.0	2.1	2.1
R	-50	1768	—	3.1	2.1	2.0	1.9	1.9	1.7	1.9	2.0
B	50	1780	—	—	—	4.9	3.2	2.8	2.4	2.3	2.0
N28	-270	400	1.2	0.9	0.9	0.9	—	—	—	—	—
N14	0	1300	—	0.9	0.9	0.9	1.1	1.1	1.2	1.3	—

* Attachment to the DaqBoard/2000 Series requires a DBK200, DBK202, DBK203A, DBK209, DBK213, or DBK214

** ±100 mV with a DaqBook/2000 Series, DaqBoard/2000 Series or LogBook

Specifications

Operating Temperature: -30 to +70 ˚C
System Connector: All DBK options have a DB37 male, which mates with P1*
TC/mV Connector
- **DBK81:** Board-mounted screw terminals
- **DBK82:** Board-mounted screw terminals
- **DBK83:** External pod-mounted screw terminals
- **DBK84:** Mini-TC connectors

Functions: TC types J, K, S, T, E, B, R, N; x100 (voltage)
Inputs
- **DBK81:** 7 differential TC/mV inputs
- **DBK82:** 14 differential TC/mV inputs
- **DBK83:** 14 differential TC/mV inputs
- **DBK84:** 14 differential TC/mV inputs

Input Voltage Range: ±100 mV**
Input Impedance: 40M Ohm (differential); 20M Ohm (single-ended)
Input Bandwidth: 4 Hz
Input Bias Current: 10 nA typ
CMRR: 100dB typ
Maximum Working Voltage (signal + common mode): ±10V
Over-Voltage Protection: ±40V
Power Requirements
- **DBK81:** 35 mA max from ±15V; 2 mA max from +5V
- **DBK82:** 60 mA max from ±15V; 2 mA max from +5V
- **DBK83:** 60 mA max from ±15V; 2 mA max from +5V
- **DBK84:** 60 mA max from ±15V; 2 mA max from +5V

Voltage Accuracy: ±(0.2% of rdg +50 µV)
Temperature Coefficient: 10 ppm for every degree outside the range of 0 to 50 ˚C
TC Accuracy: Valid for one year, 18 to 28 ˚C, see table below
Temperature Coefficient for Type T TC: ±0.03 ˚C per ˚C ambient outside the range of 18 to 28 ˚C
Minimum Resolution: 0.1 ˚C for all TC types
Power Consumption
- **DBK81:** 1060 mW;
- DBK**82, DBK83, DBK84:** 1810 mW

Ordering Information

Description	Part Number
7-channel TC/mV card with screw-terminal connections	DBK81
14-channel TC/mV card with screw-terminal connections	DBK82
14-channel TC/mV card with external screw-terminal Pod and 3 ft. cable	DBK83
14-channel TC/mV module with mini TC connector jacks	DBK84

Male Connectors for Subminiature TC Jacks

Type J male connector	CN-144-JM
Type K male connector	CN-144-KM
Type T male connector	CN-144-TM

Accessories & Cables

DBK81, DBK82, and DBK83

For use with DBK10, use CA-37-x ribbon cable; contact factory of additional cabling options

For use with DBK60 or LogBook/360, no cable is required (except from DBK60 or LogBook/360 to the A/D mainframe)

For use with no enclosure, use CA-37-x, where x is the number of DBK devices attached

For use with DaqLab Series (internal slots), use CA-255-2T with one board, or CA-37-2 for use with two DBK cards; contact factory for additional cabling options

DBK84

Rack mount kit	RackDBK3
Molded T expansion cable; 2 in.	CA-255-2T
Molded T expansion cable; 4 in.	CA-255-4T
Ribbon cable, where x is the number of DBK devices attached	CA-37-x

Note: DBK82 does not install in a DBK10 enclosure. The CA-37-x ribbon cable can also be used in lieu of the CA-255-x molded T cables.

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