

OMB-DBK90

56-Channel Thermocouple Input Module for OMB-DAQSCAN-2000 Series



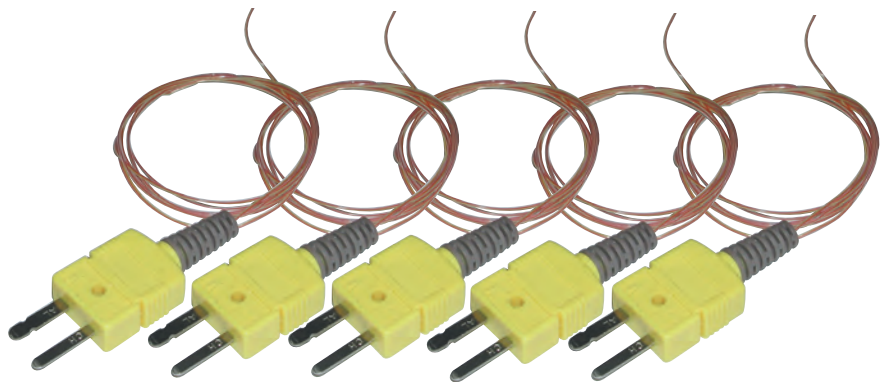
\$1749
Basic Unit

OMB-DBK90, \$1749, shown
smaller than actual size.

- ✓ 56 Thermocouple Channels in One Compact and Rugged Enclosure
- ✓ Supports Any Thermocouple Type on Any Channel
- ✓ Very Low Cost per Channel and Very High-Channel Density
- ✓ Attach Up to 16 Units Together for Up to 896 Channels per A/D Mainframe

The OMB-DBK90 module provides 56 channels of high-accuracy thermocouple (TC) inputs. The OMB-DBK90 is ideally suited for high-channel-count TC applications, with a maximum TC capacity of 896 channels per system. For larger channel-count applications, multiple mainframes can be combined for a maximum channel capacity of 3584 channels.

Thermocouples attach to the OMB-DBK90 via mini-TC input connectors, and any TC type can be installed into any channel. Each row of 14 TC inputs has a separate cold-junction sensor to ensure accurate readings.



Ready made insulated thermocouples with miniature male connector and heavy duty flex strain relief.

OMB-DBK90 modules are housed in a rugged all-metal package that can be connected to an OMB-DAQSCAN-2000 and rack-mounted with an optional rack-mount kit.

When multiple OMB-DBK90's are mounted together, a male and female P1 connector on either side of the unit provides all system connections so that only a single cable back to the A/D mainframe is required.

For distributed applications, such as throughout the cabin of a vehicle, OMB-DBK90 modules can be mounted as separate units.

Up to 20' of cable can be used to connect OMB-DBK90 modules.

Each OMB-DBK90 has a built-in auto-zero channel and a CJC channel. The OMB-DBK90 can measure one TC channel in 3 ms, 14 TC channels in 16 ms, and all 56 TC channels in 61 ms.

An OMB-DBK90 based system of 896 channels can be measured in 976 ms. This speed is slower than other OMB-DBK modules to ensure that the TC measurements are accurate, low noise, and stable. Typical measurement accuracies are better than 0.7°C, with channel-to-channel variation typically less than 0.5°C.

If OMB-DBK90 measurements are mixed with measurements from other OMB-DBK options, the other measurements can be made at their standard 5 or 10 μ s/channel rate.



Specifications

System Compatibility:

Attaches to an
OMB-DAQSCAN-2000

System Connector: Male and female DB37 for unit-to-unit mating and mating with P1 on the acquisition mainframe

TC Connector: Mini-TC connectors

ACOM Connector Type:

Pomona model 5936-0

Inputs: 56 differential TC inputs, open TC detection per channel

TC Types: J, K, T, E, S, R, B, N28, N14

Speed: 1 channel in 3 ms,
14 channels in 16 ms,
56 channels in 61 ms

Dimensions:

285 W x 88 D x 52 mm H
(11 x 3.44 x 2.05")

Weight: 0.96 kg (2.12 lb)

Power Requirements:

40 mA max from ± 15 V;

40 mA max from 5 V;

1400 mW total

Input Impedance: 4 M Ω

(differential) in parallel
with 400 pF

Input Bandwidth: 1 kHz

Minimum Resolution:

0.1°C for all TC types

TC Accuracy: Valid for one
year at 25°C ambient (see table)

Operating Temperature:

-30 to 70°C (-22 to 158°F)

Relative Humidity: 0 to 95%
non-condensing

Temperature Coefficient of

Accuracy for Type T TC: $\pm 0.05^\circ\text{C}$

for every $^\circ\text{C}$ away from 25°C

Channel-to-Channel

Crosstalk:

-90 dB typ (0 to 100 Hz)

DC CMRR: -80 dB typ

AC CMRR: -80 dB typ (0
to 60 Hz)

Maximum Common

Mode Voltage: ± 10 V

Overvoltage

Protection: ± 40 V

OMB-DBK90, \$1749,
and OMB-RM-DBK90, \$29,
rack mount kit, shown smaller
than actual size



OMB-DAQSCAN-2005,
\$2049, front and back, shown
smaller than actual size.

TC Accuracy at Measurement Temperature in $^\circ\text{C}$ ($\pm^\circ\text{C}$)

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	1.5	-

Accuracy conditions: exclusive of thermocouple errors, exclusive of noise,
VCM = 0 25°C ambient temperature, stabilized for 1 hour.

AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)

Model No.	Price	Description
OMB-DBK90	\$1749	56-channel thermocouple input module
OMB-CA-37-1	51	37-pin cable, 0.18 m (7") long, connects OMB-DBK90 to OMB-DAQSCAN
OMB-DAQSCAN-2005	2049	Ethernet system with 16 single-ended/8 differential 250 KHz 16 bit analog inputs, 40 digital I/O, 4 analog outputs, 4 frequency/pulse Counters and 2 frequency/pulse generators
OMB-RM-DBK90	29	Rack mount kit for OMB-DBK90