

OMB-DBK90

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



\$1699
Basic Unit



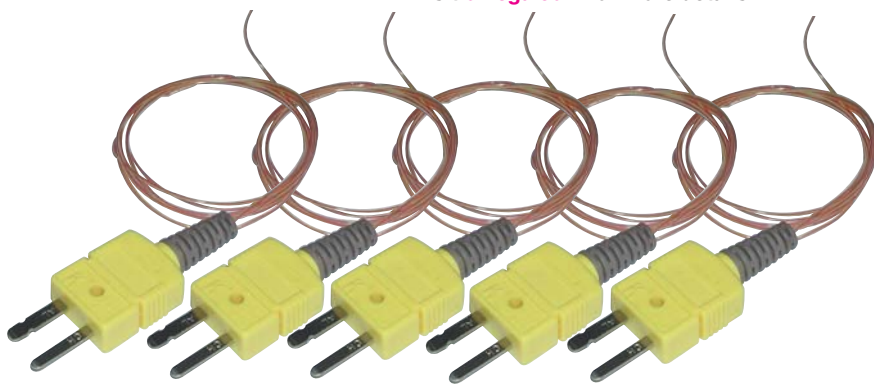
- ✓ 56 Thermocouple Channels in One Compact and Rugged Enclosure
- ✓ Supports Any Thermocouple Type on Any Channel
- ✓ Very Low Cost per Channel and Very High-Channel Density
- ✓ Attach Up to 16 Units Together for Up to 896 Channels per A/D Mainframe

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.

OMB-DBK90, \$1699, shown smaller than actual size.

5SRTC-TT-K-24-26, \$54, 5 pack basic unit. Visit omega.com for more details.



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.



OMB-DBK90, \$1699,
and OMB-RM-DBK90, \$29,
rack mount kit, shown smaller
than actual size

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-DAQSCAN-2000,
\$1999, 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 | \$1699 | 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 | 1999 | 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 |

Each OMB-DBK90 module is supplied with complete operator's manual on CD ROM.

Ordering Example: OMB-DBK90 56-channel thermocouple input module and OMEGACARESM 1 year extended warranty for OMB-DBK90 (adds 1 year to standard 1-year warranty) and OMB-CA-37-1 cable, \$1699 + 150 + 51 = \$1900.

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