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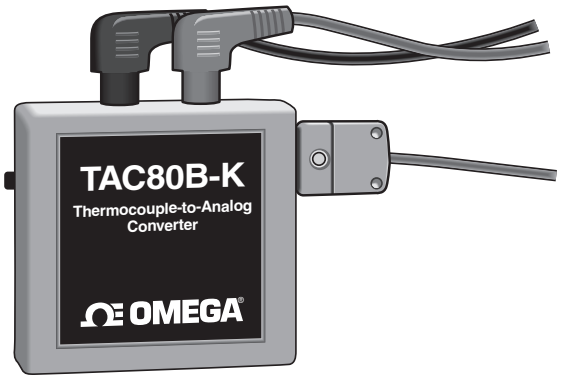
TAC80B-J, K, T

Thermocouple to Analog Converter



INSTRUCTION SHEET

M1710/0109

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GENERAL DESCRIPTION

The OMEGA® TAC80B-J, K, T Thermocouple to Analog Converter can turn any chart recorder, analog or digital voltmeter into an accurate, wide range temperature measuring instrument. It is powered by either an internal 9 volt battery or an optional power adapter (TAC80B-AC). The TAC80B is a universal thermocouple amplifier and linearizer which provides a precision 1mV/°C or °F signal for type J, K or T thermocouples. Cold junction compensation is built in. Each unit is supplied with mating connector, standard-to-miniature connector adaptor, and 9V battery.

UNPACKING

Remove the Packing List and verify that you have received all items. If you have any questions about the shipment, call the Customer Service Department. When you receive the shipment, inspect the container and equipment for any signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.
NOTE: The carrier will not honor any claims unless all shipping material is saved for their examination. After examining and removing contents, save packing material in the event reshipment is necessary.

INSTALLATION

1. Connect the TAC80B to the strip chart recorder or meter. The HI plug connects to the HI (+) receptacle and the LO plug to the LO (-) receptacle.
2. Plug the thermocouple into the SMP socket on the TAC80B.

OPERATION

CAUTION: When the range switch is in the TEST position (center), full battery voltage (9V) is applied to the output. The power switch must be in the OFF position before switching from °F to °C or vice-versa (see Figure 1-1).

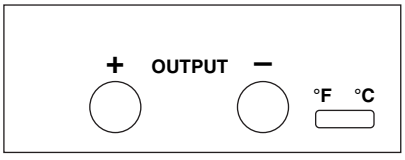

Figure 1-1. °C/°F Switch

Multimeter Use

1. For temperatures less than 200°C or 200°F, set the multimeter range to 200 mV.
2. For temperatures greater than 200°C or 200°F, set the multimeter range to 2 V.

Temperature is read directly on the multimeter in °C or °F; the TAC80B converts the mV signal into a temperature measurement displayed in °C.

Strip Chart Recorder Use

To use the TAC80B with a strip chart recorder, set the recorder span to the mV range that corresponds to the mV output at that temperature to be measured. For example, to read between 50°C and 150°C, set the range to 100 mV in the CALIBRATE mode and suppress the zero by 50 mV.

NOTE: Output is 1 mV per °C or 1 mV per °F.

SPECIFICATIONS

RANGES:	Type J:	-4° to 1112°F (-20° to 600°C)
	Type K:	-4° to 1832°F (-20° to 1000°C)
	Type T:	-4 to 572°F (-20° to 300°C)
OPERATING TEMPERATURE:		0° to 50°C
POWER:		9V alkaline
INPUT CONNECTION:		SMP connector, standard to SMP adaptor supplied
OUTPUT CONNECTION:		Standard banana plug or jack
STORAGE TEMPERATURE:		14° to 122°F (-10° to +50°C)
OUTPUT:		1 mV per °C or °F
ACCURACY:	Type J:	±2.6°C, ±4.3°F
	Type K:	±3.6°C, ±6.1°F
	Type T:	±1.8°C, ±3.0°F
COLD JUNCTION COMPENSATION:		0.05°C/°C
DIMENSIONS:		H: 2.25" (57mm) x W: 2.4" (71mm) x D: 1" (25mm)
WEIGHT:		6 oz.

CALIBRATION

Equipment required: 3-1/2 or 4-1/2 digit multimeter with ±0.1% accuracy, stable voltage source, TRC III Ice Point™ Cell, TRP (J, K, T) Reference Probe.

Set up the equipment as shown below. Set the Function Switch to "°C" or "°F" position. Turn power on. Set voltage source and adjust potentiometers as follows.

	Set Voltage Source	Adjust	for Multimeter Reading
Model TAC80B-J			
°C	0.000 mV	P1	00.00 mV
	33.102 mV	P2	600.0 mV
°F	0.000 mV	P4	32.00 mV
	33.102 mV	P3	1112.0 mV
Model TAC80B-K			
°C	0.000 mV	P1	00.00 mV
	37.325 mV	P2	900.0 mV
°F	0.000 mV	P4	32.00 mV
	37.325 mV	P3	1652.0 mV
Model TAC80B-T			
°C	0.000 mV	P1	00.00 mV
	14.862 mV	P2	300.0 mV
°F	0.000 mV	P4	32.0 mV
	14.862 mV	P3	572.0 mV

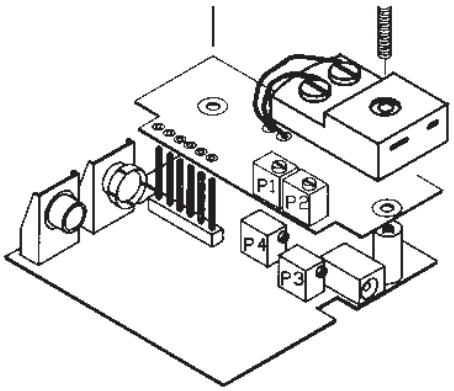

Figure 1-2. Potentiometer Locations

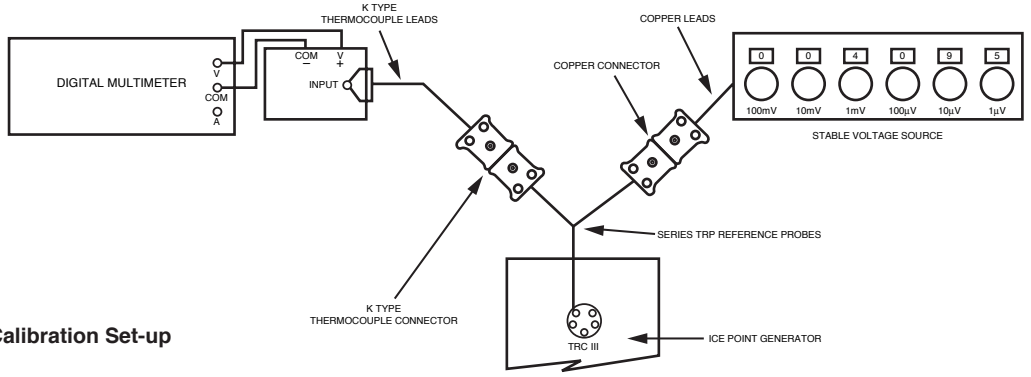

Figure 1-3. Calibration Set-up

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WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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