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).

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**

<table>
<thead>
<tr>
<th>Model TAC80B-J</th>
<th>°C</th>
<th>0.000 mV</th>
<th>Adjust</th>
<th>for Multimeter Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>00.00 mV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>33.102 mV</td>
<td>600.0 mV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>33.102 mV</td>
<td>1112.0 mV</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model TAC80B-K</th>
<th>°C</th>
<th>0.000 mV</th>
<th>Adjust</th>
<th>for Multimeter Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>00.00 mV</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>37.325 mV</td>
<td>900.0 mV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>37.325 mV</td>
<td>1652.0 mV</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model TAC80B-T</th>
<th>°C</th>
<th>0.000 mV</th>
<th>Adjust</th>
<th>for Multimeter Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1</td>
<td>14.862 mV</td>
<td>00.00 mV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P2</td>
<td>14.862 mV</td>
<td>300.0 mV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P3</td>
<td>14.862 mV</td>
<td>572.0 mV</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1-3. Calibration Set-up

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**WARRANTY**

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of 13 months from date of purchase. OMEGA Repair 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 our customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. Our Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Unless marked on the outside of the return package and on any correspondence. We are glad to offer suggestions on the use of our various products. Nevertheless, OMEGA only warrants that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of buyer set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

SPECIAL CONDITION: Should this equipment be used in or with any nuclear installations or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

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