WARRANTY INFORMATION

LIMITED ONE-YEAR WARRANTY

MAXTEC INTERNATIONAL CORPORATION warrants to the original purchaser that its B & K-Precision product, and the component parts thereof, will be free from defects in workmanship and materials for a period of one year from the date of purchase.

MAXTEC will, without charge, repair or replace, at its option, defective product or component parts upon delivery to an authorized B & K-Precision service contractor or the factory service department, accompanied by proof of the purchase date in the form of a sales receipt.

To obtain warranty coverage in the U.S.A., this product must be registered by completing and mailing the enclosed warranty registration card to MAXTEC, B & K-Precision, 6470 West Cortland Street, Chicago, Illinois 60635 within fifteen (15) days from the date of purchase.

Exclusions: This warranty does not apply in the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs. It is void if the serial number is altered, defaced or removed.

MAXTEC shall not be liable for any consequential damages, including without limitation damages resulting from loss of use. Some states do not allow limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific rights and you may also have other rights which vary from state to state.

For your convenience we suggest you contact your B & K-Precision distributor, who may be authorized to make repairs or can refer you to the nearest service contractor. If warranty service cannot be obtained locally, please send the unit to B & K-Precision Service Department, 6470 West Cortland Street, Chicago, Illinois 60635, properly packaged to avoid damage in shipment.

B & K-Precision Test Instruments warrants products sold only in the U.S.A. and its overseas territories. In other countries, each distributor warrants the B & K-Precision products which it sells.

WARRANTY SERVICE INSTRUCTIONS

1. Refer to the MAINTENANCE section of your B & K-Precision instruction manual for adjustments that may be applicable.

2. If the above-mentioned does not correct the problem you are experiencing with your unit, pack it securely (preferably in the original carton or double-packed). Enclose a letter describing the problem and include your name and address. Deliver, or ship PREPAID (UPS preferred in U.S.A.) to the nearest B & K-Precision authorized service agency (see list enclosed with unit).

If your list of authorized B & K-Precision service agencies has been misplaced, contact your distributor for the name of your nearest service agency, or write to:

B & K-Precision, Factory Service Operations
Maxtec International Corporation
6470 West Cortland Street
Chicago, Illinois 60635
Tel: (312) 889-1448

Also use this address for technical inquiries and replacement parts orders.
FEATURES
- 3-1/2 digit extra large (0.8" digits) high contrast LCD display.
- Single function and range control.
- Six resistance ranges: 200 Ω to 20 MΩ.
- Nine capacitance ranges: 200 pF to 200 mF (20,000 µF).
- Two LED test currents.
- Measures hFE and leakage current for NPN and PNP transistors.
- Tests batteries under load conditions.
- Tests SCR’s.
- Measures diode forward voltage.
- Measures diode leakage current.
- External adjustment “zeroes out” effects of test leads in low-value capacitance measurements.
- Non-slip grip.
- Non-skid rubber feet.
- Tilt stand.
- Wall hanger cutout.

OPTIONAL ACCESSORIES
- Carrying case: LC-29
- Replacement test leads: FP-30

ELECTRICAL SPECIFICATIONS
All accuracies are ±(reading + number of digits) at 23°C , ±5°C, less than 75% R.H.

CAPACITANCE

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Test Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>200pF</td>
<td>0.1pF</td>
<td>±(0.5% rdg + 1 digit + 0.5pF)</td>
<td>820 Hz</td>
</tr>
<tr>
<td>20pF</td>
<td>1pF</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>82 Hz</td>
</tr>
<tr>
<td>200nF</td>
<td>10pF</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>82 Hz</td>
</tr>
<tr>
<td>20nF</td>
<td>100pF</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>8.2 Hz</td>
</tr>
<tr>
<td>2nF</td>
<td>1nF</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>8.2 Hz</td>
</tr>
</tbody>
</table>

Test Voltage: 3.2 V maximum from “+” terminal to “−” terminal.
Input Protection: protected against damage from charged capacitors (more than 50 Vdc) by fuse (2.5 A, 250 V, fast-acting).

Zero Adjustment: range approximately ±20 µV.

RESISTANCE

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Max. open circuit voltage</th>
<th>Overload protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>200Ω</td>
<td>0.1Ω</td>
<td>±(0.75% rdg + 4 digit)</td>
<td>3.2V</td>
<td></td>
</tr>
<tr>
<td>2kΩ</td>
<td>1Ω</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>0.5V</td>
<td></td>
</tr>
<tr>
<td>20kΩ</td>
<td>10Ω</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>0.5V</td>
<td></td>
</tr>
<tr>
<td>200kΩ</td>
<td>1kΩ</td>
<td>±(0.5% rdg + 1 digit)</td>
<td>0.5V</td>
<td></td>
</tr>
</tbody>
</table>

DC/AC max.

DIODE CHECK

<table>
<thead>
<tr>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Max. test current</th>
<th>Max. open circuit voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1mV</td>
<td>±1% 5% rdg</td>
<td>±1.5 A</td>
<td>1.5mA</td>
<td>3.2V</td>
</tr>
</tbody>
</table>

Overload Protection: 500 V dc/ac maximum.

LED TEST
Test Voltage: 3.2 V maximum.
Test Current: two ranges: 2 mA or 10 mA.
Display: reads approximate forward voltage of lit LED.

TRANSISTOR hFE AND LEAKAGE (Ileak) TESTS
hFE: Range: 0-10000, either PNP or NPN.
Ileak: Base Current: approximately 10 µA.
Vce: approximately 3 V.
Ileak: 10 mA to 200 mA.

SCR TEST
SCR good/diagnostic test.

BATTERY TEST
9 V Battery Load: approximately 15 mA.
1.5 V AA, C or D Cell Load: approximately 150 mA.
1.5 V Button Cell Load: approximately 0.8 mA.
Display: reads approximate battery voltage.

SPECIFICATIONS

GENERAL SPECIFICATIONS
Display: 3-1/2 digit liquid crystal display (LCD) with 0.8" digits, automatic decimal point, negative sign, and low battery indicator; maximum reading of 1999.

Polarity indication: Automatic, positive implied, negative indicated.

Overrange indication: “+1” or “−1”.

Low Battery Indication: “Battery” displayed.

Measurement Rate: 2 times per second, nominal.

Operating Temperature: 0°C to 50°C, 40% R.H.

Storage Temperature: 20°C to 60°C, 40% R.H. (battery removed).

Temperature Coefficient: ±0.15% (specified accuracy) per °C, for less than 18°C or greater than 28°C.

Power Requirements: Standard 9 V battery, NEDA 1604 or equivalent.

Battery Life: Approximately 150 hours (alkaline).

Dimensions: (H x W x D): 6-7/8" x 3-1/4" x 1-1/2" (175 mm x 85 mm x 38 mm).

Weight (including battery): 11.6 oz. (326 g).

Accessories Supplied: Test leads (pair), spare fuse, battery, instruction manual.
DIODE TEST
1. Set the function/range switch to the white "D" position.
2. Connect the red test lead to the + "DIODES" jack and the black test lead to the - "DIODES" jack. The red lead is + " polarity. NOTE: this test does NOT test the socket on the meter (with the diode graphic), it is used for measurement of leakage current only.
3. To check forward voltage (Vf), connect the red test lead to the anode of the device and the black test lead to the cathode. Diodes and semiconductor rectifiers with normal Vf of less than approximately 2.0 Volts can be checked.
4. The display indicates forward voltage. Normal diode voltages are approximately 0.4 Volts for germanium diodes and 0.7 Volt for silicon diodes. An anode indicates an open diode. A shorted diode shows near 0 Volts.
5. Reverse the test lead connections to the diode. The reading should be the same as with open test leads (an overrange indication). A lower reading indicates a leashed diode. Diode leakage currents, If, can be measured (0.001 μA) as described in the following section.

DIODE LEAKAGE CURRENT MEASUREMENT
1. Set the function/range switch to "DIODES (μA)". This setting is located near the transistor/SCR socket, and should not be confused with the "diode" ("ED") setting at the top of the dial.
2. Plug the diode into the "C" and "E" receptacles of the transistor/SCR socket, in the direction shown by the graphic.
3. The display will indicate the leakage current, in microamperes (μA).

LED TEST
1. Connect the red test lead to the + "LED" jack and the black test lead to the - "LED" jack. The red lead is + " polarity.
2. Set the function/range switch to the two white "LED" test current settings, either 10 mA or 2 mA. Note: 10 mA is appropriate for most LED's; high-brightness LED's, however, will light adequately on the 2 mA setting.
3. Connect the red test lead to the anode of the LED and the black test lead to the cathode. A good LED will light, and the meter will read the approximate forward voltage across it. Typical values are 1.7 to 2.0 Volts on the 2 mA range, and 2.0 to 2.2 Volts on the 10 mA range. However, these values may vary between device types.

1. Display, 1-1/2 digit display (1999 maximum) with automatic decimal point and + (-) sign. Overrange indicated by displaying most significant digit as "1" with all other digits blank. Low battery indicator in lower left corner.
2. Capacitance Zero Adjustment. Adjustment zeroes out display in capacitance measurement mode (range approximately ±20 pF).
3. Function/Range Switch. Selects one of six operating modes: resistance measurement (6 ranges), capacitance measurement (9 ranges), battery test (3 settings), transistor/SCR test (5 settings), LED test (2 settings), or diode test.
4. Transistor/SCR Input Socket. Socket for direct plug-in of transistors or SCR's. Also used for measurement of diode leakage current. The "E" and "F" (emmitode) socket hole is placed in two positions for easier device insertion.
5. "+" "-" Jack - LED/RESISTORS/DIODES/BATTERIES.
6. "+" "-" Jack - LED/RESISTORS/DIODES/BATTERIES.
7. "+" "-" Jack - CAPS. Banana jack connected directly to " + " side of capacitor plug-in socket.
8. "+" "-" Jack - CAPS. Banana jack connected directly to " - " side of capacitor plug-in socket.
10. POWER Switch. Turns unit on/off.
BATTERY REPLACEMENT

The low battery symbol first appears when the battery is about 90% depleted. The unit may be operated for a short period but the battery should be replaced soon thereafter. Remove the three screws and the tilt and stand/wall holder assembly from the case bottom. Lift the end of the case bottom until it gently un- snaps from the case top at the end nearest the LCD. Replace BATTERY REPLACEMENT

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FUSE REPLACEMENT

To replace the fuse, set the function/range switch to LED - 10 (top position), and remove the top case as above for battery replacement. Gently pull the circuit board (two-board combination) away from the case bottom and function/range switch. A gentle wiggling motion will facilitate this removal. Do not remove any circuit board screws. Replace the fuse only with the original type 250 mA, 250 V, 5 x 20 mm fast-acting fuse (6 K & part number 196:0-0-250). When reassembling, make sure that the function/range switch is set to LED - 10 mA, and the black arrow on the circuit board rotate (white hexagonal hole) is pointing up. Make sure the fuses are properly seated and the two snaps on the case top are engaged.

TEST LEADS

Periodically examine the test leads to ensure that the conductors are not intermittent or broken. Also make sure that good contact pressure exists at the test lead receptacles, and keep these areas free from dirt and corrosion.

POWER-ON WITH CASE TOP REMOVED

To power the unit for any reason with the pc board removed from the top case, connect a jumper between points A and B on the board as shown in the figure. A clipped resistor lead works well. The jumper serves as a substitute for the POWER-ON switch, which remains attached to the case top.

CONTACTS FOR POWER-ON WITH CASE TOP REMOVED

MAINTENANCE

BATTERY REPLACEMENT

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