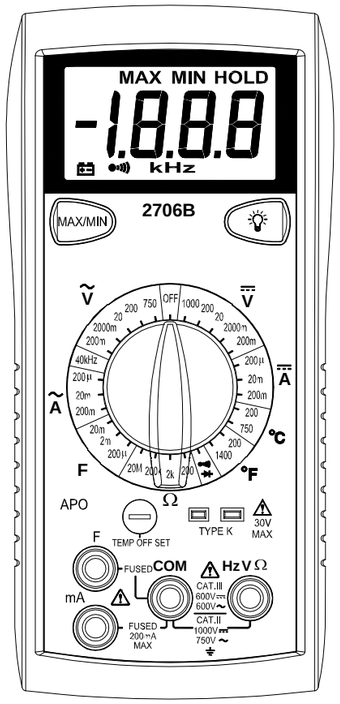
OPERATING INSTRUCTIONS
MODEL 2706B
DIGITAL MULTIMETER



SAFETY INFORMATION

The following safety information must be observed to ensure maximum personal safety during the operation at this meter:

Use the meter only as specified in this manual or the protection provided by the meter might be impaired.

Test the meter on a known voltage before using it to determine if hazardous voltage is present.

Do not use the meter if the meter or test leads look damaged, or if you suspect that the meter is not operating properly.

Never ground yourself when taking electrical measurements. Do not touch exposed metal pipes, outlets, fixtures, etc., which might be at ground potential. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats, or any approved insulating material.

Turn off power to the circuit under test before cutting, unsoldering, or breaking the circuit. Small amounts of current can be dangerous.

Use caution when working above 60V dc or 30V ac rms. Such voltages pose a shock hazard.

When using the probes, keep your fingers behind the finger guards on the probes.

Measuring voltage which exceeds the limits of the multimeter may damage the meter and expose the operator to a shock hazard. Always recognize the meter voltage limits as stated on the front of the meter.

SPECIFICATIONS

Display: 3½ digit liquid crystal display (LCD) with a maximum reading of 1999.
Polarity: Automatic, positive implied, negative polarity indication.
Overrange: (OL) or (-OL) is displayed.
Zero: Automatic.
Low battery indication: The " " is displayed when the battery voltage drops below the operating level.
Measurement rate: 2.5 times per second, nominal.
Auto power off: Approx. 25 minutes.
Operating environment: 0℃ to 50℃ at < 70% relative humidity.
Storage temperature: -20℃ to 60℃, 0 to 80% relative humidity.
Accuracy: Stated accuracy at 23℃±5℃, < 75% relative humidity.
Temperature Coefficient: 0.1 x (specified accuracy) per ℃. (℃ to 18℃, 28℃ to 50℃).
Altitude: 6561.7 feet (2000m).
Power: Single standard 9-volt battery, NEDA 1604, JIS 006P, IEC 6F22.
Battery life: 150 hours typical with carbon-zinc.
Dimensions: 165mm (H) x78mm (W) x42.5mm (D).
Weight: Approx. 10.0 oz.(285g) including holster.
Accessories: One set test leads, one spare fuse, 9V battery (installed), and Operating Instructions.

DC VOLTS

Ranges: 200mV, 2000mV, 20V, 200V, 1000V
Resolution: 0.1mV
Accuracy: ± (0.5% rdg + 1 dgt)
Input impedance: 10MΩ
Overload protection: 1000VDC or 750VAC rms
600VDC/AC rms 15 seconds on 200mV range

AC VOLTS (50Hz - 500Hz)

Ranges: 200mV, 2000mV, 20V, 200V, 750V
Resolution: 0.1mV
Accuracy:
± (1.2% rdg + 5 dgts) on 200mV to 20V ranges
± (2.0% rdg + 5 dgts) on 200V, 750V ranges
Input impedance: 10MΩ
Overload protection: 1000VDC or 750VAC rms
600VDC/AC rms 15 seconds on 200mV range

CURRENT

Ranges: 200uA, 20mA, 200mA
Resolution: 0.1uA
DC accuracy: ± (1.0% rdg + 1 dgts)
AC accuracy: (50Hz ~ 500Hz)
± (1.5% rdg + 5 dgts)
Input protection: 0.25A/500V fast blow ceramic fuse

RESISTANCE

Ranges: 200Ω, 2kΩ, 200kΩ, 20MΩ
Resolution: 0.1Ω
Accuracy:
± (1.0% rdg + 4 dgts) on 200Ω to 200kΩ ranges
± (2.0% rdg + 4 dgts) on 20MΩ range
Open circuit volts: 0.3Vdc (3.0Vdc on 200Ω range)
Overload protection: 500VDC or AC rms

CONTINUITY

Audible indication: Less than 100Ω
Response time: 100ms
Overload protection: 500VDC or AC rms

DIODE TEST

Test current: Approx. 1.0mA
Accuracy: ±(1.5% rdg + 3dgts)
Open circuit volts: 3.0Vdc typical
Overload protection: 500VDC or AC rms

CAPACITANCE

Ranges: 200uF, 2mF, 20mF
Resolution: 0.1uF
Accuracy: ±(4% rdg + 10 dgts)
Test frequency: 21Hz
Test voltage: <3.0V
Input protection: 0.25A/500V fast blow ceramic fuse

FREQUENCY (Autoranging)

Range: 10Hz to 40kHz
Resolution: 1Hz
Accuracy: ±(0.1% rdg + 3 dgts)
Sensitivity: 3.5V RMS min
Overload protection: 500VDC or AC rms

TEMPERATURE

Ranges: -35℃ ~ 750℃, -30℉~ 1400℉
Resolution: 0.1℃, 0.1℉
Accuracy:
±(1.0% rdg + 1℃) 0℃ ~ 400℃
±(3.0% rdg + 3℃) -35℃ ~ 0℃, 400℃ ~ 750℃
±(1.0% rdg + 2℉) -4℉ ~ 750℉
±(3.0% rdg + 6℉) -30℉ ~ -4℉, 750℉ ~ 1400℉
Sensor type: K-type thermocouple
Overload protection: 60VDC or 30V AC rms

OPERATION

Before taking any measurements, read the Safety Information Section. Always examine the instrument for damage, contamination (excessive dirt, grease, etc.) and defects. Examine the test leads for cracked or frayed insulation. If any abnormal conditions exist do not attempt to make any measurements.

MAX/MIN

Press MAX/MIN once begins recording MIN and MAX.
Press MAX/MIN to select current reading MIN or MAX.
Hold down for 2 seconds to exit MAX/MIN function.

Backlight

Press the ☼ button to activate the backlight for approximate 4.5 minutes.

Voltage Measurements

1.Connect the red test lead to "VΩ" jack and the black test lead to the "COM" jack.
2.Set the Function/Range switch to the desired voltage type (AC or DC) and range. If magnitude of voltage is not known, set switch to the highest range and reduce until a satisfactory reading is obtained.
3.Connect the test leads to the device or circuit being measured.
4. For dc, a (-) sign is displayed for negative polarity; positive polarity is implied.

Current Measurements

1.Connect the red test lead to the "mA" jack and the black test lead to the "COM" jack.
2.Set the Function/Range switch to the DC or AC ranges.
3.Remove power from the circuit under test and open the normal circuit path where the measurement is to be taken. Connect the meter in series with the circuit.
4.Apply power and read the value from the display.

Resistance and Continuity Measurements

1.Set the Function/Range switch to the desired resistance range or continuity position.
2.Remove power from the equipment under test.
3.Connect the red test lead to the "VΩ" jack and the black test lead to the "COM" jack.
4.Touch the probes to the test points. In ohms, the value indicated in the display is the measured value of resistance. In continuity test, the beeper sounds continuously, if the resistance is less than 100Ω.

Diode Tests

1.Connect the red test lead to the "VΩ" jack and the black test lead to the "COM" jack.
2.Set the Function/Range switch to the "▶|" position.
3.Turn off power to the circuit under test. External voltage across the components causes invalid readings.
4.Touch probes to the diode. A forward-voltage drop is about 0.6V (typical for a silicon diode).
5.Reverse probes. If the diode is good, "OL" is displayed. If the diode is shorted, "000" or another number is displayed.
6. If the diode is open, "OL" is displayed in both directions.

Capacitance Measurements

1. Set the Function/Range switch to the desired F (capacitance) range.
2.Connect the red test lead to the "F " jack and the black test lead to the "COM " jack.
3.Touch the probes to the capacitor. Observe polarity when measuring polarized capacitors.
4. Read the capacitance directly from the display.
5. Discharge the capacitor before taking capacitance measurements.

Frequency Measurements

1. Set the Function/Range switch to the "40kHz" position.
2. Connect the red test lead to the "VΩ" jack and the black test lead to the ☐ "COM " jack.
3. Connect the test leads to the point of measurement and read the frequency from the display.

Temperature Measurements

1. Set the Function/Range switch to the desired temperature range: ℃, ℉
2. Remove leads and slide the Temp switch to the right to close lead jacks.
3.Plug any K-type thermocouple directly into the meter to measure temperature.
4. Take temperature measurement using the thermocouple probe and read the temperature from the display.

Temp offset adjustment

The OFFSET control is set at the factory to allow for the variations found in standard thermocouples. By adjusting the OFFSET control, you can optimize measurement accuracy for a particular thermocouple at a particular temperature.

MAINTENANCE

WARNING
Remove test leads before changing battery or fuse or performing any servicing.

Battery Replacement

Power is supplied by a 9 volt battery. (NEDA 1604, IEC 6F22). The " " appears on the LCD display when replacement is needed. To replace the battery, remove the three screws from the back of the meter and lift off the front case. Remove the battery from case bottom.

Fuse Replacement

If no current and capacitance measurements are possible. Check for a blown overload protection fuse. For access to fuses, remove the three screws from the back of the meter and lift off the front case.
Replace (F1/current measurements) (F2/capacitance measurements) only with the original type 0.25A/500V, fast acting ceramic fuse.

Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Dirt or moisture in the terminals can affect readings.

CE

Safety: Conforms to IEC61010-1 (EN61010-1), CATII 1000V, CATIII 600V, Class II, Pollution degree 2 Indoor use.
CATII: Is for measurements performed on circuits directly connected to the low-voltage installation.
CAT III: Is for measurements performed in the building installation.

EMC: Conforms to EN61326.

The symbols used on this instrument are:

⚠ Caution, refer to accompanying documents
Equipment protected throughout by Double insulation (Class II)
~ Alternating current
⎓ Direct current
⏚ Ground