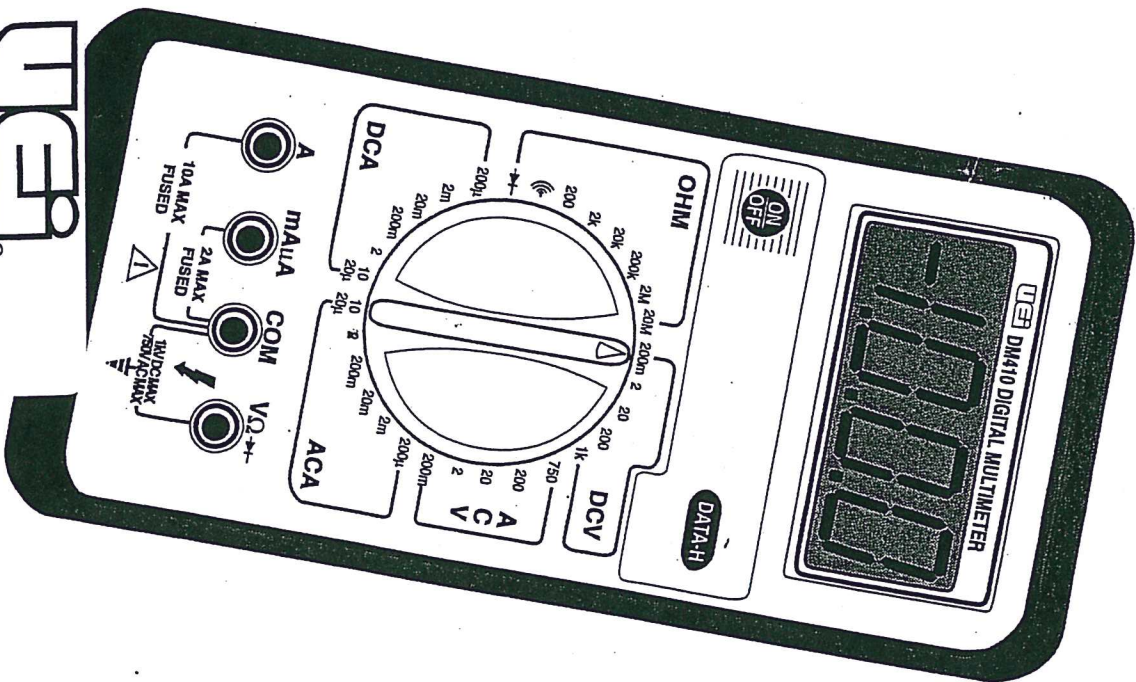


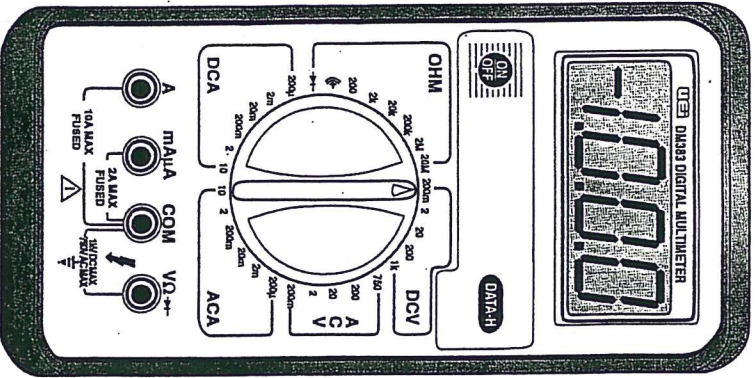
UEE
DM383 • DM410
Digital Multimeter



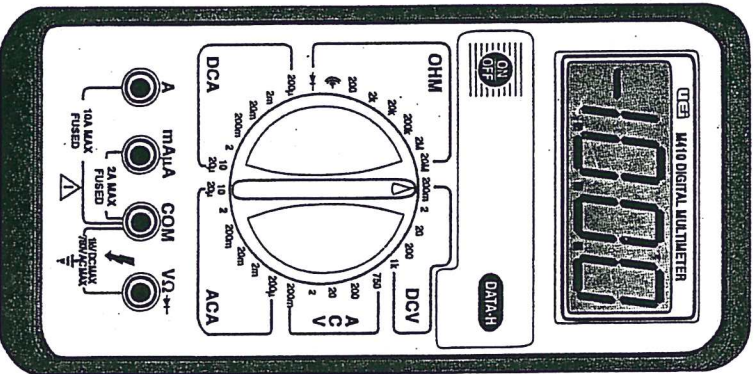
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DM383



DM410

DM383/DM410 INSTRUCTION BOOK

CONGRATULATIONS!!!

You have just purchased a state of the art tool to help you to do your job better and more efficiently. Please take time to read this manual to familiarize yourself with its capabilities before using the instrument.

FEATURES OF THE DM383/DM410:









- Designed to meet or exceed IEC348 and UL1244
- 3 1/2 digit LCD display with 0.91" tall numerals
- Data Hold
- Diode Test
- Rubber Boot
- 600 Volt fuse protection on all current ranges
- Continuity buzzer
- Auto polarity
- 20µA range for measuring Flame Safeguard current (DM410 only)
- 5 Year Limited Warranty

SAFETY CONSIDERATIONS:

WARNING!

Observe all safety precautions when measuring higher voltages and/or currents. Turn off power to the circuit under test, set the DM383/DM410 to the desired function and range, connect the test leads to the DM383/DM410 and then to the circuit under test. Reapply power. If an erroneous reading is observed, disconnect power immediately and recheck all settings and connections.

INTERNATIONAL SYMBOLS:

	DANGEROUS VOLTAGE		GROUND
	AC-ALTERNATING CURRENT		SEE EXPLANATION
	DC-DIRECT CURRENT		DOUBLE INSULATION (Protection Class II)
	ETHER DC OR AC		FUSE

SAFETY TIPS

Exceeding the specified limits of this meter is dangerous, and can expose the user to serious and possibly fatal injury. To ensure safe and appropriate use, please follow the safety guidelines below:

- Do not try to measure any voltage that exceeds 1000 DCV or 750 ACV
- Voltages above 25V AC or DC may constitute a serious shock hazard.
- Do not attempt to use this meter if either the meter or the test leads have been damaged.
- Turn off Power, disconnect the battery, and discharge all capacitors before using the Ω and diode functions.
- Use a current clamp if measuring any current above 10 amps.
- When measuring current, turn the power off on the unit under test before connecting the meter in the circuit.
- Do not exceed the limits shown on each function page.

INPUT JACKS AND PUSH BUTTONS:

- "A" input jack- The red test lead is plugged into this jack for measuring current on the 10 AC or DC amp functions.
- "mA/ μ A" input jack- The red test lead is plugged into this jack for measuring mA or μ A on either AC or DC current functions.
- "COM" input jack- The black test lead is plugged into this jack for all measurements.
- "V Ω " input jack- The red test lead is plugged into this jack for all ACV, DCV, OHM, Continuity Buzzer and Diode test functions.
- "ON/OFF" push-button- Turns the DM383/DM410 on and off.
- "HOLD" push-button- Freezes the reading on the LCD for all Functions and Ranges.

GENERAL SPECIFICATIONS:

- Operating Temperature 32° to 104°F (0° to 40°C)
- Storage Temperature -4° to 140°F (-20° to 60°C)
- Relative Humidity 0% to 80% RH
- Battery Type 9V, NEDA 1604 or 6F22 or 006P
- Battery Life 200 hrs typical, alkaline battery
- Size (with boot) 2.25" x 3.875" x 7.35"
- Weight (with boot) 1 lb, 3oz
- Safety Meets or exceeds IEC 348, CSA C22.2 NO. 231, ISA-DS82 AND UL1244

MEASURING DC VOLTS

WARNING!

To avoid the risk of electrical shock, instrument damage and/or equipment damage input voltages must not exceed 1000 volts DC. Do not attempt to take any unknown voltage measurements that may be in excess of 1000 volts DC.

1. Set function and range switch to the desired DCV range. If you do not know the value of the voltage to be measured, always start with the highest range and reduce the setting as required to obtain a satisfactory reading.
2. Plug the red test lead into the "V/ Ω " input jack and the black lead into the "COM" input jack of the instrument.
3. Disconnect the power from the circuit to be tested.
4. Connect the test leads to the circuit to be tested.
5. Reapply power to the circuit, the measured voltage will appear on the display of the instrument.
6. If the red test lead is connected to the negative (or lower voltage) side of the circuit, a minus sign will appear on the display, at the left.
7. Disconnect power to the circuit before removing the test leads from the circuit.

FUNCTION	RANGE	RESOLUTION	ACCURACY
DCV	200mV	100 μ V	± 0.5% of reading, ± 1 digit
	2V	1mV	
	20V	10mV	
	200V	0.1V	
	1000V	1V	

MAXIMUM INPUT VOLTAGE = 1000 DCV

INPUT IMPEDANCE = 10 MEG

MEASURING AC VOLTS

WARNING!

To avoid the risk of electrical shock, instrument damage and/or equipment damage input voltages must not exceed 750 volts AC. Do not attempt to take any unknown voltage measurements that may be in excess of 750 volts AC.

1. Set function and range switch to the desired ACV range. If you do not know the value of the voltage to be measured, always start with the highest range and reduce the setting as required to obtain a satisfactory reading.
2. Plug the red test lead into the "V/Q" input jack and the black lead into the "COM" input jack of the instrument.
3. Disconnect the power from the circuit to be tested.
4. Connect the test leads to the circuit to be tested.
5. Reapply power to the circuit, the measured voltage will appear on the display of the instrument.
6. Disconnect power to the circuit before removing the test leads from the circuit.

FUNCTION	RANGE	RESOLUTION	ACCURACY
ACV	200mV	100µV	± 1.2% of reading, ± 3 digits ± 0.8% of reading, ± 3 digits
	2V	1mV	
	20V	10mV	
	200V	0.1V	
	750V	1V	

MAXIMUM INPUT VOLTAGE = 750 ACV

INPUT IMPEDANCE = 10 MEG

MEASURING DC CURRENT (AMPS)

CAUTION!

The current functions are protected by a fuse of 600 volt rating. To avoid damage to the instrument, current sources having open circuit voltages greater than 600 volts DC or AC must not be measured.

NOTE: When taking current measurements, the DM383/DM410 must be connected in SERIES with the circuit, or circuit element under test. Never connect the test leads across a voltage source (in parallel). This can cause damage to the circuit under test or the DM383/DM410.

1. Set function and range switch to the desired DCA range. If you do not know the value of the current to be measured, always start with the highest range and reduce the setting as required to obtain a satisfactory reading.
2. Plug the red test lead into the "mAµA" input jack (if 10 amp range is being used, plug the red lead into the "A" input jack) and the black lead into the "COM" input jack of the instrument.
3. Disconnect the power from the circuit to be tested.
4. Connect the test leads in series to the circuit to be tested.
5. Reapply power to the circuit, the measured current will appear on the display of the instrument.
6. Disconnect power to the circuit before removing the test leads from the circuit.

FUNCTION	RANGE	RESOLUTION	ACCURACY
DCA	*20µ	0.01µA	± 0.5% of reading, ± 1 digit ± 1.2% of reading, ± 1 digit ± 2.0% of reading, ± 5 digits
	200µ	0.1µA	
	2m	1µA	
	20m	10µA	
	200m	100µA	
	**2A	1mA	
	10A	10mA	

*DM410 ONLY

**Plug the red test lead into the "mAµA" input jack for measurements on this range.

NOTE: "µA" and "mA" ranges are protected by a 5 amp, 600 volt fuse
"A" range is protected by a 10 amp, 600 volt fuse

MEASURING AC CURRENT (AMPS)

CAUTION!

The current functions are protected by a fuse of 600 volt rating. To avoid damage to the instrument, current sources having open circuit voltages greater than 600 volts DC or AC must not be measured.

NOTE:

When taking current measurements, the DM383/DM410 must be connected in SERIES with the circuit, or circuit element under test. Never connect the test leads across a voltage source (in parallel). This can cause damage to the circuit under test or the DM383/DM410.

1. Set function and range switch to the desired ACA range. If you do not know the value of the current to be measured, always start with the highest range and reduce the setting as required to obtain a satisfactory reading.
2. Plug the red test lead into the "mA μ A" input jack (if the 10 amp range is being used, plug the red lead into the "A" input jack) and the black lead into the "COM" input jack of the instrument.
3. Disconnect the power from the circuit to be tested.
4. Connect the test leads in series to the circuit to be tested.
5. Reapply power to the circuit, the measured current will appear on the display of the instrument.
6. Disconnect power to the circuit before removing the test leads from the circuit.

FUNCTION	RANGE	RESOLUTION	ACCURACY
ACA	*20 μ	0.01 μ A	$\pm 1.0\%$ of reading, ± 3 digit
	200 μ	0.1 μ A	
	2m	1 μ A	
	20m	10 μ A	$\pm 1.8\%$ of reading, ± 3 digits
	200m	100 μ A	
	**2A	1mA	
	10A	10mA	$\pm 3.0\%$ of reading, ± 7 digits

*DM410 ONLY

**Plug the red test lead into the "mA μ A" input jack for measurements on this range.

NOTE: "A" and "mA" ranges are protected by a 5 amp, 600 volt fuse
"A" range is protected by a 10 amp, 600 volt fuse

MEASURING RESISTANCE (OHMS, CONTINUITY)

CAUTION!

Turn off power and discharge all capacitors on circuit to be tested before attempting in-circuit resistance measurements. Failure to do so may end up in equipment and/or instrument damage.

The resistance measuring circuit applies a known value of constant current through the unknown resistance and then measures the voltage developed across it. Therefore, remove all power to the circuit under test when making resistance measurements. If any voltage is present in the test circuit and erroneous reading will result. The DM383/DM410 may be damaged if voltage in excess of 600 VAC is present.

NOTE: When measuring critical low ohm values, touch tips of test leads together and record the reading. Subtract this reading from any additional measurement to obtain the most accurate value.

1. Set the Function switch to the desired "R" position.
2. Insert the black test lead into the "COM" input jack and the red test lead into the "V Ω " input jack.
3. Connect the test leads to the circuit to be measured.
4. The measured resistance will be on the DM383/DM410 display.

FUNCTION	RANGE	RESOLUTION	ACCURACY
R	200	0.1 Ω	$\pm 0.5\%$ of reading, ± 1 digits
	2K	1 Ω	
	20K	10 Ω	
	200K	0.1K Ω	
	2M	1K Ω	
	20M	10K Ω	$\pm 1.0\%$ of reading, ± 2 digits

AUDIBLE CONTINUITY BUZZER:

1. Set the Function switch to the "C" position.
2. Insert the black test lead into the "COM" input jack and the red test lead into the "V Ω " input jack.
3. Connect the test leads to the circuit to be measured.
4. The DM383/DM410 will emit a continuous tone for resistance's of less than 90 ohms.

DIODE TEST:

1. Set the Function switch to the "←" position.
 2. Insert the black test lead into the "COM" input jack and the red test lead into the "VΩ" input jack.
 3. Touch the red test lead to the Anode (+ side, non-banded end) and the black test lead to the Cathode (- side, banded end).
 4. If the diode is good, the reading should indicate 0.3 to 0.8 on the LCD.
 5. Reverse the red and black leads on the diode, if the LCD reads OFL (the overload sign) the diode is good.
- NOTE:** A defective diode will read OFL (the overload sign) or 0.00 no matter how the test leads are connected.

MICROWAVE DIODES:

Most microwave diodes can not be tested by a DMM with a diode test function. This is because the DMM does not supply enough power to turn these diode on. UEI offers an accessory test lead, model ATL60, that boosts the power output so that microwave diodes can be adequately tested. Consult your distributor for more details.

BATTERY AND FUSE REPLACEMENT

1. Unplug the test leads and remove the rubber boot from the instrument.
2. Remove the screws in the rear of the instrument and separate the front and rear housing.
3. Replace the battery and/or fuses with the same type and size as the one removed.
4. Snap the front and rear housing back together and reinstall the screws.
5. Reattach the rubber boot.

ACCESSORIES

AB9.....	BATTERY, 9 VOLT
AF120.....	FUSE: 5A, 600V CERAMIC
AF125.....	FUSE: 10A, 600V CERAMIC
ATL50.....	TEST LEAD SET
AH190.....	RUBBER BOOT
AAC.....	ALLIGATOR CLIP ADAPTORS
ATL60.....	MICROWAVE DIODE BOOSTER LEADS
ATLFSG.....	FLAME SAFEGAUARD RELAY TEST KIT
CA2K.....	AC/DC CLAMP-ON ADAPTOR
CA310.....	AC CLAMP-ON ADAPTOR
DPM2K.....	PHOTOTACH ADAPTOR
HMIK.....	HUMIDITY ADAPTOR
TAIK.....	TEMPERATURE ADAPTOR

FIVE YEAR LIMITED WARRANTY

This product is warranted to the purchaser against defects in material and workmanship for five years from the date of purchase.

What is covered: Repair parts and labor, or replacement at the company's option. Transportation charges to the purchaser.

What is not covered: Transportation charges to the company. Damages from abuse or improper maintenance, see operation instructions. Any other expense, consequential damages, incidental damages, or incidental expenses, including damages to property. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

How to Obtain Warranty Performance: Attach to the product your name, address, description of problem, phone number and proof of date of purchase. Package and return to:



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Implied Warranties: Any implied warranties including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to two years from the date of purchase. To the extent any provision of this warranty is prohibited by federal or state law and cannot be preempted, it shall not be applicable. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.