universal enterprises

MCP9
OPERATING INSTRUCTIONS

8030 SW Nimbus • Beaverton, OR 97008
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MCP9
OPERATING INSTRUCTIONS

WARNING: OBSERVE ALL SAFETY PRECAUTIONS WHEN MEASURING HIGHER VOLTAGES. TURN OFF POWER TO THE CIRCUIT UNDER TEST, SET THE MCP9 CONTROLS. CONNECT THE TEST LEADS TO THE METER AND THEN TO THE CIRCUIT UNDER TEST. REAPPLY POWER

The MCP9 is a precision electrical test instrument. Take this opportunity to read these instructions and familiarize yourself with the MCP9, its features, and its operation.

FEATURES

- Rotary scale for ease of operation
- Magnifier scale lens for better readability
- New improved jaw shape
- One handed operation
- Color coded scale
- Twist lock probes for safe operation
- Fuse protected OHMS circuit

SPECIFICATIONS

Ranges:	
AC Amps:	0—6, 15, 40, 100, 300A
AC Volts:	0—150, 300, 600V
OHMS:	1KΩ (20Ω center scale)
Accuracy:	
AC Amps:	±3% of full scale
AC Volts:	±3% of full scale
OHMS:	±3% of scale length
Jaw Opening:	1¼"
Battery:	One 1.5V. size AA (NEDA #15D) battery, supplied
Fuse:	0.3Amp 0.9OHM (size 5φ×20mm)
Size:	8 1/8×3 1/8×1 1/2" (206×79×38mm)
Weight:	14 ounces (425 gm)

CONTROLS

SELECTOR SWITCH

The SELECTOR switch is used to select the circuit function and range. It is good practice to start with the highest range setting of the SELECTOR switch for a particular function if the magnitude of the function is unknown. Read the section on OPERATION for more detail.

OHM ADJ

The OHM ADJ control is used only on the OHMS function. The purpose of this control is to calibrate the MCP9 to compensate for changes in the voltage of the internal 1.5V battery.

LOCK SWITCH

The LOCK switch is located at the upper left side of the scale plate. It is used to secure the pointer at the last reading when measurements must be made in a confined or difficult-to-read location.

MECHANICAL ZERO ADJUST

The MECHANICAL ZERO ADJUST is a plastic screw located on the meter face just beneath the LOCK switch. This adjustment is used to set the pointer to the zero index mark at the left side of the scale plate.

INPUT JACKS

The INPUT JACKS are a special Twist Lock banana type. The Twist Lock feature prevents the test leads from accidently separating from the jacks during the taking of AC Voltage measurements.

COM: This jack, located at the end of the MCP9, is common to either AC Volts or OHMS measurements.

VOLTS: This jack, located at the end of the MCP9, is used for taking AC Voltage measurements.

OHMS: This jack, located at the left side of the MCP9, is used for taking resistance measurements. A switch is built into this jack which is operated when the green OHMS test lead is inserted.

OPERATION

General Comments

1. Slide LOCK switch to the left to unlock meter pointer.
2. If required, the pointer can be reset to the zero position by adjusting the black plastic screw below the LOCK switch.
2. Always start with the highest range when in doubt about the magnitude to be measured.
4. Always kill the power when taking resistance measurements.
5. Protect the MCP9 from severe shock or vibration. The MCP9 should not be stored in a hot or humid environment.
6. Use the wrist strap to protect against accidently dropping the MCP9.

Measuring AC Current

When measuring current, always be sure the SELECTOR switch is set to the appropriate AMP range. When in doubt,

always use the highest current range first. The switch can always be reset to a lower range for a more precise reading. AC current measurements are made on the black AMP scales.

Clamp the jaws of the MCP9 around a single circuit wire.

Note: Clamp only one wire at a time for measurement. If two or more wires are clamped together, the tester will not read.

If the measured value on the meter scale is less than the full scale value of the next lower range, reset the SELECTOR switch to the lower range for a more accurate reading.

Slide Pointer LOCK switch toward the right to lock the pointer at its indicating point when readings must be made in a confined or difficult-to-read location.

Measuring AC Voltage

When measuring voltage be sure the SELECTOR switch is set to the appropriate VOLT range. When in doubt, always use the highest VOLT range first. The switch can always be set to a lower range for a more precise reading. AC voltage measurements are made on the red VOLT scales.

Insert the red and black test leads into the COM and VOLT input jacks. The test leads may be locked in position by rotating them to the right (clockwise). Connect the two test leads to the circuit under test.

Measuring Resistance

> REMOVE ALL POWER TO THE CIRCUIT UNDER TEST WHEN MAKING RESISTANCE MEASUREMENTS. IF ANY VOLTAGE IS PRESENT IN THE TEST CIRCUIT AN ERRONEOUS READING WILL RESULT AND THE MCP9 FUSE MAY OPEN.

Connect the black test lead to the COM jack and the green test lead to the OHMS jack. The OHMS jack has an internal switch so be sure that the green test lead is inserted fully into the jack.

Touch the free ends of the test leads together. The pointer will swing to the right hand side of the scale. Adjust the OHM ADJ control until the pointer is set on the green numeral 0.

Note: If this adjustment cannot be made refer to the MAINTENANCE section. Rezero the MCP9 each time that the tester is used for making resistance measurements.

To make the resistance measurement, connect the free ends of the test leads across the element to be measured. The measured resistance value will be the green numeral indicated on the OHMS scale.

MAINTENANCE

Battery

The purpose of the internal 1.5V, size AA, battery is to supply power to the circuit under test while making resistance

measurements. Eventually the battery will age to the point where it will not be possible to zero the meter with the OHM ADJ control. When this happens the battery should be replaced.

Observe the proper battery polarity when replacing the battery. It is recommended that the battery be removed if the MCP9 is not to be used for a long period of time. Remove the screws in the rear of the case for access to the battery.

Fuse

The fuse is in series with the OHM input jack. If this fuse is open the OHM circuit will not work. When replacing the fuse be sure to replace it with a fuse of the same current rating and internal resistance. The use of a fuse with a different internal resistance may cause the accuracy of the OHMS scale to be off. Remove the screws in the rear of the case for access to the fuse.

Fuse should be 0.3Amp/0.9 OHM Resistance.

Mechanical Zero Adiust

The pointer is set to register 0 at the left hand edge of the scale when there is no input to the MCP9 and it is laying face up on a flat surface. If the pointer does not register 0, it may be reset to that position by carefully adjusting the black screw in the meter face, just below the LOCK switch.

ACCESSORIES

		Stock No.
Battery:	1.5V, size AA	AB1
Fuse:	0.3 Amp	AF45
Test Leads:	ACV, Twist Lock (pr)	ATL30
Test Leads:	OHMS, Twist Lock (ea)	ATL35

ATL30
035

Alligator Clip Adapters, Insulated (pr) .....AAC
110VAC Line Splitter ALS1

LIMITED ONE YEAR WARRANTY

This product is warranted to the purchaser against defects in material and workmanship for one year 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 operating 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:

8030 SW Nimbus • Beaverton, OR 97008
(503) 644-8723 • Fax: (503) 643-6322

Implied Warranties: Any implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to one year from date of

purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

To the extent any provision of this warranty is prohibited by federal, state, or municipal 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.

UNIVERSAL ENTERPRISES, INC.

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MCP8A/9A

OPERATING INSTRUCTIONS

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Effective 7/6/01

MCP8A/9A OPERATING INSTRUCTIONS

WARNING: Observe all safety precautions when measuring higher voltages. Turn off power to the circuit under test, set the MCP8A/9A controls. Connect the test leads to the meter and then to the circuit under test. Reapply power.

The MCP8A/9A is a precision electrical test instrument. Take this opportunity to read these instructions and familiarize yourself with the MCP8A/9A, its features, and its operation.

FEATURES

- Ruggedized to withstand a 5 ft. drop
- Rotary scale for ease of operation
- Magnifier scale lens for better readability
- New improved jaw shape
- One handed operation
- Color coded scale
- Twist lock test leads for safe operation
- Fuse protected OHMS circuit
- Taut band meter movement

SPECIFICATIONS

Ranges: MCP8A AC Amps: 0-1.5, 5, 15, 50, 150A
MCP9A AC Amps: 0-6, 15, 40, 100, 300A
MCP8A/9A: AC Volts: 0-150, 300, 600V
OHMS: 1KΩ (20Ω center scale)

Accuracy: AC Amps: ± 3% of full scale
AC Volts: ± 3% of full scale
OHMS: ± 3% of scale length

Jaw Opening: 1"

Battery: One 1.5V size AA (NEDA #15D) battery, supplied

Fuse: 0.3 AMP 0.9 OHM (size 5mmx20mm)

Size: 8" x3" x1" (206x79x38mm)

Weight: 14 ounces (425 gm)

CONTROLS

SELECTOR SWITCH

The SELECTOR switch is used to select the circuit function and range. It is good practice to start with the highest range setting of the SELECTOR switch for a particular function if the magnitude of the function is unknown. Read the section on OPERATION for more detail.

OHM ADJ

The OHM ADJ control is used only on the OHMS function. The purpose of this control is to calibrate the MCP8A/9A to compensate for changes in the voltage of the internal 1.5V battery.

LOCK SWITCH

The LOCK switch is located at the upper left side of the scale plate. It is used to secure the pointer at the last reading when measurements must be made in a confined or difficult-to-read locations.

MECHANICAL ZERO ADJUST

The MECHANICAL ZERO ADJUST is a plastic screw located on the meter face just beneath the LOCK switch. This adjustment is used to set the pointer to the zero index mark at the bottom of the scale plate.

INPUT JACKS

The INPUT JACKS are a special Twist Lock banana type. The Twist Lock feature prevents the test leads from accidently separating from the jacks during the taking of AC Voltage and ohm readings.

COM: This jack, located at the end of the MCP8A/9A, is common to either AC Volts or OHMS measurements.

VOLTS. This jack, located at the end of the MCP8A/9A, is used for taking AC Voltage measurements.

OHMS: This jack, located at the left side of the MCP8A/9A, is used for taking resistance measurements. A switch is built into this jack which is operated when the red test lead is inserted.

OPERATION

General Comments

1. Slide LOCK switch to the left to unlock meter pointer.
2. If required, the pointer can be reset to the zero position by adjusting the black plastic screw below the LOCK switch.
3. Always start with the highest range when in doubt about the magnitude to be measured.
4. Always disconnect the power when taking resistance measurements.
5. Protect the MCP8A/9A from severe shock or vibration. The MCP8A/9A should not be stored in a hot or humid environment.
6. Use the wrist strap to protect against accidently dropping the MCP8A/9A.

Measuring AC Current

When measuring current, always be sure the SELECTOR switch is set to the appropriate AMP range. When in doubt, always use the highest current range first. The switch can always be reset to a lower range for a more precise reading. AC current measurements are made on the black AMP scales.

Clamp the jaws of the MCP8A/9A around a single circuit wire. **Note:** Clamp only one wire at a time for measurement. If two or more wires are clamped together, the tester will not read the correct current.

If the measured value on the meter scale is less than the full scale value of the next lower range, reset the SELECTOR switch to the lower range for a more accurate reading.

Slide Pointer LOCK switch toward the right to lock the pointer at its indicating point when readings must be made in a confined or difficult-to-read locations.

Measuring AC Voltage

When measuring voltage be sure the SELECTOR switch is set to the appropriate VOLT range. When in doubt, always use the highest VOLT range first. The switch can always be set to a lower range for a more precise reading. AC voltage measurements are made on the red VOLT scales.

Insert the red and black test leads into the COM and VOLT input jacks. The test leads may be locked in position by rotating them to the right (clockwise). Connect the two test leads to the circuit under test.

Measuring Resistance

> Remove all power to the circuit under test when making resistance measurements. If any voltage is present in the test circuit an erroneous reading will result and the MCP8A/9A fuse may open.

Connect the black test lead to the COM jack and the red test lead to the OHMS jack. The OHMS jack has an internal switch so be sure that the red test lead is inserted fully into the jack.

Touch the free ends of the test leads together. The pointer will swing to the upper part of the scale. Adjust the OHM ADJ control until the pointer is set on the green numeral 0.
Note: If this adjustment cannot be made refer to the MAINTENANCE section. Rezero the MCP8A/9A each time that the tester is used for making resistance measurements.

To make the resistance measurement, connect the free ends of the test leads across the element to be measured. The measured resistance value will be the green numeral indicated on the OHMS scale.

MAINTENANCE

Battery

The purpose of the internal 1.5V, size AA, battery is to supply power to the circuit under test while making resistance measurements. Eventually the battery will age to the point where it will not be possible to zero the meter with the OHM ADJ control. When this happens the battery should be replaced.

Observe the proper battery polarity when replacing the battery. It is recommended that the battery be removed if the MCP8A/9A is not to be used for a long period of time. Remove the screws in the rear of the case for access to the battery.

Fuse

The fuse is in series with the OHM input jack. If this fuse is open the OHM circuit will not work. When replacing the fuse be sure to replace it with a fuse of the same current rating and internal resistance. The use of a fuse with a different internal resistance may cause the accuracy of the OHMS scale to be off. Remove the screws in the rear of the case for access to the fuse.

Fuse should be 0.3Amp/0.9 OHM Resistance.

Mechanical Zero Adjust

The pointer is set to register 0 at the bottom edge of the scale when there is no input to the MCP8A/9A and it is laying face up on a flat surface. If the pointer does not register 0, it may be reset to that position by carefully adjusting the black screw in the meter face, just below the LOCK switch.

ACCESSORIES

	STOCK NO.
Battery: 1.5V, size AA	AB1
Fuse: 0.3 Amp	AF45
Test Leads: ACV, Twist Lock (pr.)	ATL130
Alligator Clip Adapters, Insultated (pr.)	AAC
110VAC Line Splitter	ALS1

LIMITED THREE YEAR WARRANTY

This product is warranted to the purchaser against defects in material and workmanship for Three year from the date purchase.

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

What is not covered: Transporation charges to the company. Damages from abuse or improper maintenance, see operating 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:

Service Center
Universal Enterprises, Inc.
[redacted]

Implied Warranties: Any implied warranties, including implied warranties of merchantability and fitness for a particular purpose, are limited in duration to Three year from date of purchase. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

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.

UNIVERSAL ENTERPRISES, INC.
[redacted]
Beaverton, Oregon [redacted]

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