

PORTABLE POWER SUPPLY
MODEL NUMBER VMS-1
VERSION 1.1

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MM
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VMS-1

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DANGER / WARNINGS
WARNING !!



DANGER

Complete Grounding of this unit is necessary for the safe operation of this equipment. Disconnect inputs before ungrounding this equipment

GENERAL SAFETY PRECAUTIONS



This equipment can produce **POTENTIALLY LETHAL VOLTAGES!** Improper operation or test practices may result in injury or death to the operator or surrounding personnel.

The operation of High Voltage test equipment should only be performed by personnel familiar with HIGH VOLTAGE testing and safety procedures. The operator of this equipment must be aware of all hazards associated with High Voltage testing. The operator is responsible for himself and others in close proximity of the testing area.

Some General Safety Practices for working with High Voltage Test Equipment have been listed below for your reference.

- *Become familiar with your instrument before performing an actual test*
- *Know your work area, check that all circuits are de-energized and locked out.*
- *Never work alone; always work with another qualified worker.*
- *Mark off entire work area with barriers and warning tape.*
- *Make all personnel aware of your testing activities.*
- *Be aware of dangerous conditions that may arise from energizing a test specimen.*
- *Never modify test equipment, modifications to equipment could introduce an unknown hazard or hinder a designed-in safety feature.*
- *DO NOT operate damaged equipment. Remove power, and do not use the equipment until safe operation can be verified by service-trained personnel.*

Phenix Technologies, Inc. assumes no liability for unsafe or improper use of test equipment.

SECTION 1: INTRODUCTION & SPECIFICATIONS

The Phenix Technologies VMS-1 Portable Power Supply is well equipped with the various features listed on the specifications page to allow for the easy testing of the operational voltage/current of electro-mechanical devices. The VMS-1 allows the user to carefully dial in an output voltage or current to determine the operational voltage or current levels needed for the “switching state” of various electro-mechanical devices. Both the voltage and current output levels can be simultaneously read and monitored with the highly accurate, onboard meters. The output terminals in the form of binding posts provide convenient hookup configurations depending on the type of component being tested.

TECHNICAL SPECIFICATIONS



Model:

VMS-1 Portable Power Supply

Input:

120 Volts, 10 Amps, 60 Hz, Single Phase

Output:

0-120VAC; 10AAC MAX through binding posts.

Instrumentation:

Digital Voltmeter, 3 ½ digit resolution

Scale: 0-199.9VAC. Accuracy: $\pm 0.4\%$ FS ± 2 counts

Digital Ammeter, 3 ½ digit resolution

Scale: 0-19.99AAC. Accuracy: $\pm 0.15\%$ FS ± 6 counts

Features:

Main power circuit breaker with indicator lamp.

Output via binding posts.

Heavy-duty construction designed for continuous duty.

Portable case with handle.

Simultaneous digital readouts of both RMS Voltage and Current

Two levels of adjustment: Coarse and Fine

Push button resettable circuit breakers for Overload protection

Onboard storage for Power Cord and Output leads and cables

Two copies of instruction manual, parts list, and schematics

Size: 20" L x 16" W x 7" H; 29 lbs.

508 mm L x 406 mm W x 178 mm H, 13.15 kg.

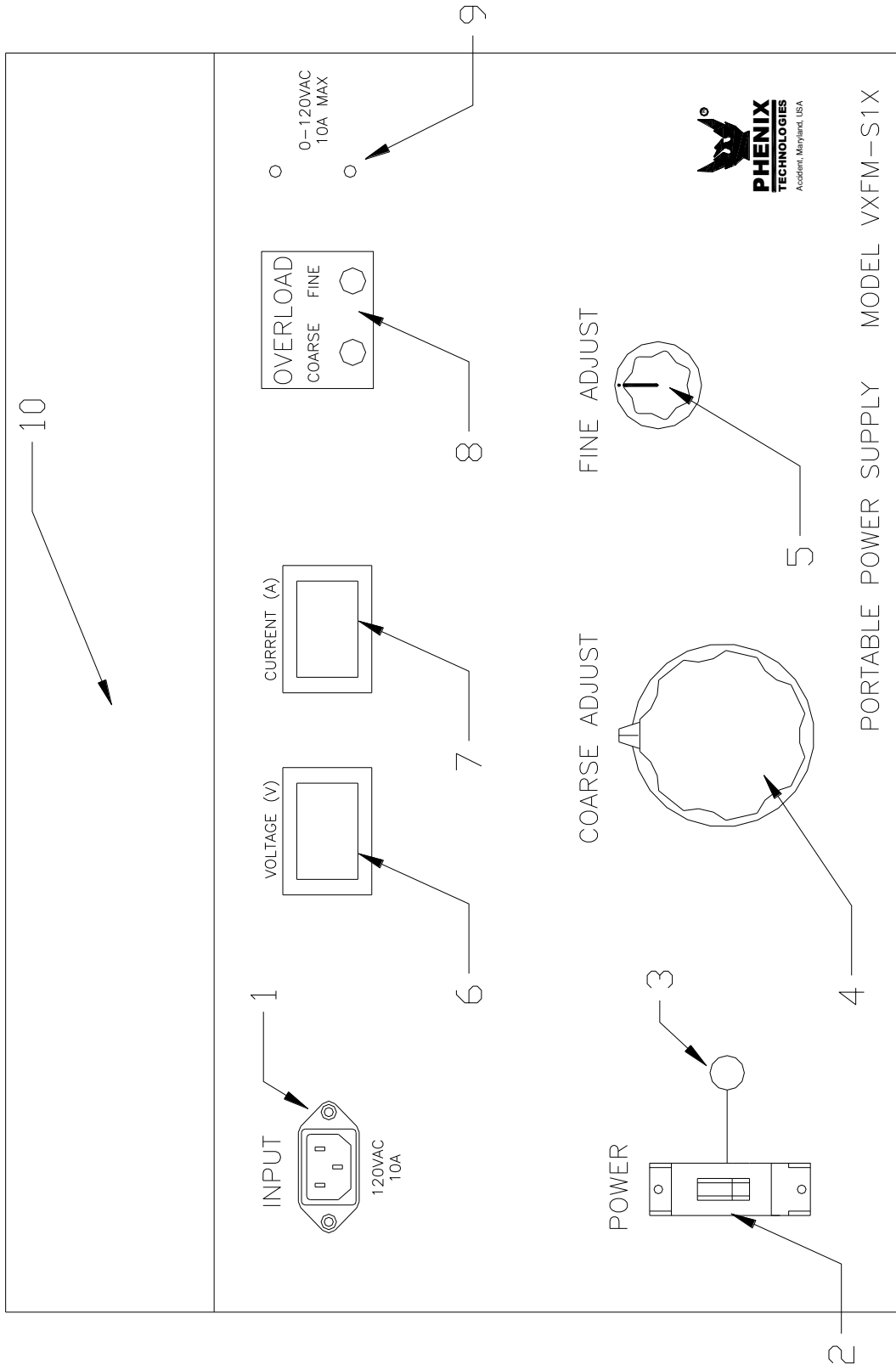
SECTION 2: CONTROL AND METERING DESCRIPTION

(Key numbers refer to Figure 1)

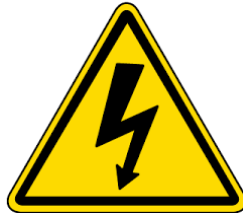
1. **Main Power In.**
2. **Main Power Circuit Breaker.** Serves dual function as main switch and provides overload protection for all circuits in test set.
3. **Main Power Indicator Lamp.** Lights when main power circuit breaker is energized and in the ON position.
4. **Coarse Adjust.** Adjusts voltage and current output levels.
5. **Fine Adjust.** Adjusts voltage and current output with finer precision than coarse adjust knob.
6. **Digital Voltmeter.** Provides continuous display of output voltage in Volts.
7. **Digital Ammeter.** Provides continuous display of output current in Amps.
8. **Overload Circuit Breakers.** Push button circuit breakers for each adjustment circuit. Button will pop up when breaker is tripped, push down to reset breaker.
9. **Output Binding Posts.** Output connection terminals to hook up components to be tested with the power supply.
10. **Cable Storage Area.** Onboard cable storage for input power cord and output clip lead wires.

CONTROL AND METERING DESCRIPTION

FIGURE 1: FRONT PANEL



SECTION 3: OPERATION AND CALIBRATION



OPERATION

Setup

1. Open unit and connect input power supply cord to the power inlet and a standard wall outlet.
2. Ensure Coarse and Fine adjustment knobs are dialed to their zeroed out positions before connecting output terminals.
3. If either of the two Overload circuit breakers are tripped, press the push button to reset the breakers.
4. Connect the output supply via the binding posts and hook up the component to be tested with the two leads that would "switch the state" of the component.

Operation

5. Turn on main circuit breaker switch to power on unit. Note indicator light comes on.
6. Using the component manufacturer's current ratings as a guide, slowly dial the Coarse adjust to within 5V of the desired level.
7. Once the output is dialed to within a ~5V margin below the desired level, slowly dial the Fine adjust until the component activates.
8. Upon completion of testing, turn off main power by switching off the main breaker before disconnecting the output leads from the test component.
9. Disconnect input power cord and output power cables and place back into the onboard storage area after each use.
10. **WARNING:** For safety reasons, dial back the Coarse and Fine adjust knobs to their zeroed-out positions before placing the unit back in storage.

OPERATION AND CALIBRATION

CALIBRATION

Your VMS-1 portable power supply itself does not require any calibration for normal operation. The onboard digital Voltmeter and Ammeter will also hold its normally calibrated settings during the lifetime of your VMS-1 for all normal indoor operations. In the rare case that either meter needs calibration adjustments, the procedure for doing so should be performed by qualified technical personnel such as the Phenix Technologies Service Department during a scheduled service appointment.

MAINTENANCE

During the lifetime of your portable power supply, certain items will need replacement. Common replacement parts are listed on page 7-1 under "Recommended Spare Parts." With the exception of the input and output cables, all other components that may need replacement require the removal of the front panel from the Portable Power Supply enclosure case. This is done through the removal of the mounting screws and washers along the perimeter of the front panel, and pulling the panel with its attached components from the enclosure. After the needed components are replaced, replace the front panel with the mounting screws and washers, carefully *hand tightening* the screws into place. Using screwdrivers or over-tightening the screws may cause the brass hardware to dislodge from the frame.

SECTION 4: CIRCUIT DIAGRAM SYMBOLS

CIRCUIT DIAGRAM SYMBOLS SYMBOLS POUR SCHEMA DE CIRCUIT SYMBOLE ZU SCHEMA				
REF	SYMBOL	DESCRIPTION	DESCRIPTION	BEMENKUNG
A		Amplifier	Unite d'amplificateur	Verstärker
ARSR		Surge Arrestor	Parafoudre	Ueberspannungsableiter
C		Capacitor	Condensateur	Kondensator
BSHG		Bushing	Tranversée	Durchfuehung
C		Electrolytic Capacitor	Condensateur électrol	Eleckrolytik kondensator
F		Fuse	Fusible	Sicherung
CT		Current Transformer	Transformateur de Courant	Stromtransformer
CB		Circuit Breaker	Intérupteur	Unterbrecher
K		Relay, Contactor	Relais, Contacteur	Relais, Schütz
L		Inductor	Self	Drossel, Spule
MDT		Motor	Moteur	Motor
MDV		Movistor	Parafoudre	Movistor
NE		Neon	Parafoudre	Ueberspannungsableiter
LP		Lamp, Indicator	Lampe	Meldeleuchte
R		Resistor	Resistance	Widerstand
R		Variable Resistor	Resistance Variable	Widerstand
T		Transformer	Transformateur	Transformer
TB		Terminal Block	Borne	Lösbare Klemme
X		Connector	Prise de Courant	Steckverbindung
K		Relay Contact Normally Open	Contact Normalement Ouvert	Schlierskontakt
K		Relay Contact Normally Closed	Contact Normalement Fermé	Öeffnungskontakt
K		Changeover Contact	Contact de Changement	Umschaltkontakt
		Shielded Wire	Cable blindé	Abgeschirmetes Kabel
TR		Transistor	Transisteur	Transistor
M		Meter	Instrument Analogue	Analog Meter
D		Diode	Diode	Diode
Z		Zener	Diode Zener	Zener
SCR		Thyristor	Thyristor	Thyristor
SW		Normally Open Maintained Switch	Interrupteur Normalement Maintenu Ouvert	Schrittschalter (Schliesser)
SW		Normally Closed Maintained Switch	Interrupteur Normalement Maintenu Fermé	Schrittschalter (Öeffner)
SW		Normally Closed Momentary Switch	Interrupteur Normalement Fermé Momentanement	Druckschalter (Öeffner)
SW		Normally Open Momentary Switch	Interrupteur Normalement Ouvert Momentanement	Druckschalter (Schliesser)
DP		Current Overload Device	Dispositif De Sûr Intensité	UeberstromschutzEinheit

SECTION 5: ELECTRICAL DIAGRAMS

Drawing Number	Description
1. 9907000	VMS-1 Electrical Schematic

SECTION 6: VMS-1 PARTS LIST

QTY.	ITEM #	PHENIX PART #	DESCRIPTION
1		2100479	Portable Power Supply Case with Carry Handle
1	CON1	1153328	Screw MNT Power Inlet Receptacle
2	F1-2	1603601	AGC-1 Fuse
2	F1-2	1603910	Single Pole Fuse Holder for AGC type Fuse
1	CB1	1601310	10A Single Pole CKT BRKR
1	CB2	1601413	Push Button CKT BRKR 1A
1	CB3	1601423	Push Button CKT BRKR 10A
1	LP1	1423270	Neon Lamp Yellow
1	CON2	1351100	Binding Post Black
1	CON3	1351104	Binding Post White
1	T3	1890209	1210B Variable Transformer
1	T2	1890100	171 Variable Transformer
1	T1	1894431	100VA Transformer
1	VM1	1506511	Digital AC Voltmeter
1	CM1	1506512	Digital AC Current meter
1		1077164	Input Power Cord 16/3 10FT
2		N/A	Output lead wires
1		1353205	Banana Plug Black
1		1356200	Banana Plug Red
2		1353042	Gator Clip – 20 Amp
1		1353041	Gator Clip Boot Black
1		1353040	Gator Clip Boot Red

SECTION 7: RECOMMENDED SPARE PARTS

QTY.	ITEM #	PHENIX PART #	DESCRIPTION
2	F1-2	1603601	AGC-1 Fuse
1	LP1	1423270	Neon Lamp Yellow
1		1077164	Power Cord 16/3 10FT
1	VM1	1506511	Digital AC Voltmeter
1	CM1	1506512	Digital AC Current meter
2		N/A	Output lead wires
1		1353205	Banana Plug Black
1		1356200	Banana Plug Red
2		1353042	Gator Clip – 20 Amp
1		1353041	Gator Clip Boot Black
1		1353040	Gator Clip Boot Red

SECTION 8: PARTS ORDERING INFORMATION

Replacement parts are available from Phenix Technologies, Inc.

Changes to Phenix Technologies' products are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest technical improvements developed in our Engineering Department. It is, therefore, important when ordering parts to include the serial number of the unit as well as the part number of the replacement part. When your purchase order is received at our office, a representative of Phenix Technologies will contact you to confirm the current price of the part being ordered. If a part you order has been replaced with a new or improved part, an applications engineer will contact you concerning any change in part number.

Send orders for replacement parts to:

**Service Department
Phenix Technologies, Inc.
75 Speicher Drive
Accident, Maryland 21520**

**PH: 1 (301) 746-8118
FAX: 1 (301) 895-5570
E-mail: info@phenixtech.com**

SECTION 9: RETURNED MATERIAL

If for any reason it should become necessary to return this equipment to the factory, the Service Department of Phenix Technologies, Inc. must be given the following information:

Name Plate Information
Model Number
Serial Number
Reason for Return
Cause of Defect

If Phenix Technologies, Inc. deems return of the part appropriate, it will then issue an "Authorization for Return."

If return is not deemed advisable, other inspection arrangements will be made.

NOTE: Material received at this plant without the proper authorization shall be held as "Customer's Property" with no service until such time as the proper steps have been taken.

Your cooperation is requested in order to ensure prompt service.

SECTION 10: CUSTOMER COMMENTS/SUGGESTIONS

Phenix Technologies made significant efforts to ensure that the materials in this Operator's Manual are correct. If there are concerns or comments as you have used this information, Phenix Technologies appreciates any feedback.

Unit Serial Number:

Sect	Page(s)	Comment

Please return to Phenix Technologies, Engineering Department, 75 Speicher Drive, Accident, MD 21520 USA.

Phone: (301) 746-8118; Fax (301) 895-5570; or E- mail info@phenixtech.com