

**PORTABLE POWER SUPPLY**  
**MODEL NUMBER VMS-3**  
**VERSION 1.1**

Copyright © Phenix Technologies, Inc.

Rev 10/11/2019 (Format)

VMS-3

# TABLE OF CONTENTS

	Section Number
DANGER / GENERAL SAFETY PRECAUTIONS	
INTRODUCTION AND TECHNICAL SPECIFICATIONS	1
CONTROL AND METERING DESCRIPTION	2
OPERATION AND CALIBRATION	3
CIRCUIT DIAGRAM SYMBOLS	4
ELECTRICAL DRAWINGS	5
PARTS LIST	6
RECOMMENDED SPARE PARTS	7
PARTS ORDERING INFORMATION	8
RETURNED MATERIAL	9
CUSTOMER COMMENTS / SUGGESTIONS	10

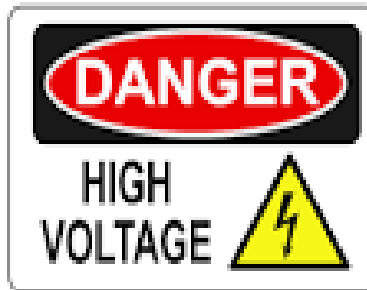
**DANGER / WARNINGS**  
**WARNING !!**



**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.*

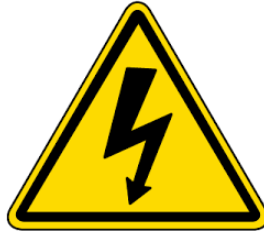
- *Become familiar with your instrument before performing an actual test*
- *Know your work area, check that all circuits are de-energized and locked out.*
- *Never work alone; always work with another qualified worker.*
- *Mark off entire work area with barriers and warning tape.*
- *Make all personnel 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-3 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-3 allows the user to dial in an output voltage or current to determine the operational voltage or current levels 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 VMS-3 is ideal for running small motors, energizing power circuits, operating circuit breakers, powering substation relays or for unregulated charging of substation batteries. The separate output terminals for both AC and DC voltage provide convenient hookup configurations depending on the type of component being tested.

## TECHNICAL SPECIFICATIONS



**Model:**

VMS-3 Portable Power Supply

**Input:**

115/120 Volts, 10 Amps, 60 Hz, Single Phase

**Output:**

0-120VAC; 10AAC MAX through binding posts (Will not reach 120VAC with the 115VAC input. Output will be 0-115VAC)

0-150VDC; 5ADC MAX through binding posts

**Instrumentation:**

**AC Meters:**

Digital Voltmeter, 3 ½ digit resolution

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

Digital Ammeter, 3 ½ digit resolution

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

**DC Meters**

Digital Voltmeter, 3 ½ digit resolution

Scale: 0-199.9VDC. Accuracy:  $\pm 0.1\%$  FS  $\pm 1$  count

Digital Ammeter, 3 ½ digit resolution

Scale: 0-04.99ADC. Accuracy:  $\pm 0.1\%$  FS  $\pm 1$  count

**Features:**

Main power circuit breaker with indicator lamp

Independent overloads for both outputs: AC – overload breaker; DC – output fuse

Output via binding posts (AC) and binding posts (DC)

Simultaneous digital readouts of both RMS Voltage and Current in both AC & DC

Two copies of instruction manual, parts list, and schematics

**Size:** 20" L x 16" W x 7" H; 26 lbs.

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

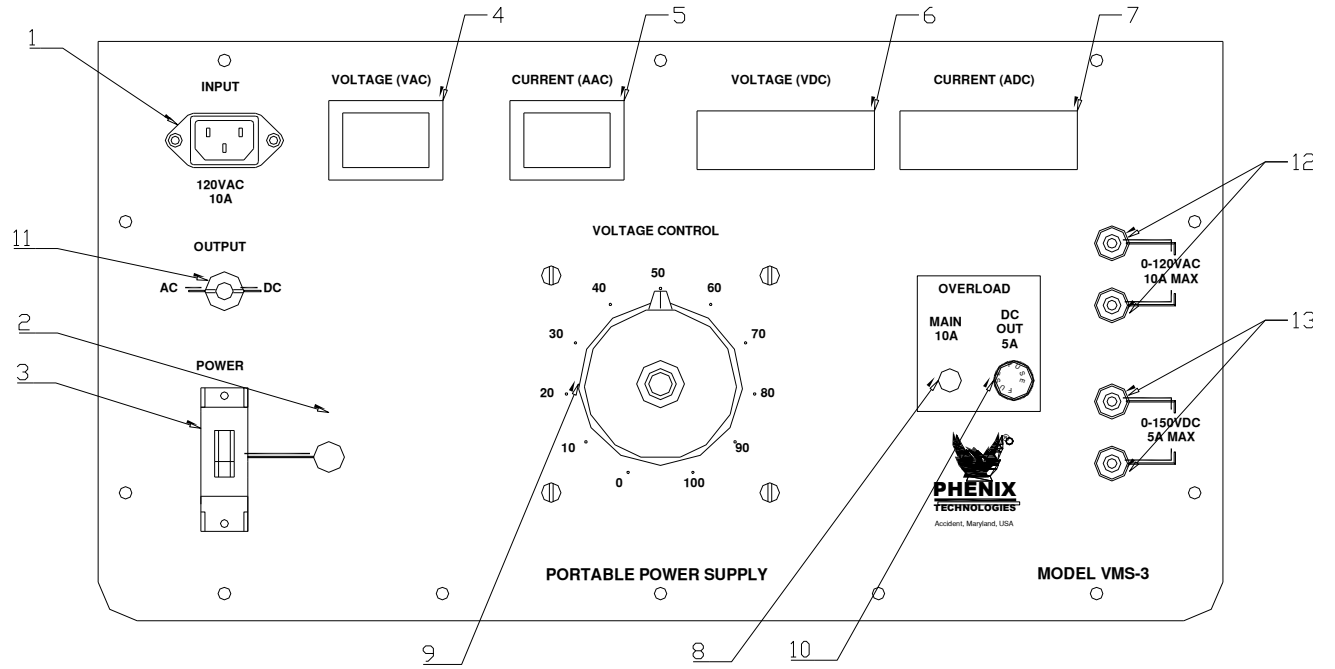
## SECTION 2: CONTROL AND METERING DESCRIPTION

(Key numbers refer to Figure 1)

1. **Input Power.** Plug the included power cord into the unit and a 120VAC, 10A supply.
2. **Main Power Indicator Lamp.** Lights when main power circuit breaker is energized and in the ON position.
3. **Main Power Circuit Breaker.** Serves dual function as main switch and provides overload protection for all circuits in test set.
4. **AC Digital Voltmeter.** Provides continuous display of AC output voltage in Volts.
5. **AC Digital Ammeter.** Provides continuous display of AC output current in Amps.
6. **DC Digital Voltmeter.** Provides continuous display of DC output voltage in Volts.
7. **DC Digital Ammeter.** Provides continuous display of DC output current in Amps.
8. **AC Overload Circuit Breaker.** Circuit Breaker will open once AC output exceeds 10A. Close switch to reset breaker.
9. **Main Variac Knob.** Adjusts voltage and current output levels.
10. **DC Overload Fuse.** Fuse will blow when DC output exceeds 5A. Replace fuse via panel fuse holder when needed.
11. **AC/DC Output Selector Switch.** Toggle to select either AC or DC output.
12. **AC Supply Binding Posts.** Connect included output leads here to apply AC voltage to a test object.
13. **DC Supply Binding Posts.** Connect included output leads here to apply DC voltage to a test object.

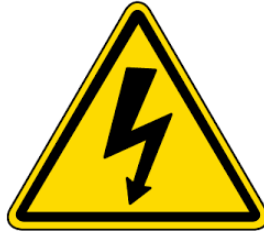
# CONTROL AND METERING DESCRIPTION

Figure 1: VMS-3 Front Panel





## SECTION 3: OPERATION AND CALIBRATION



### OPERATION

#### Setup

1. Connect input power supply to on board terminal block on the rear of the panel with 115VAC or 120VAC, 10A source.
2. Ensure Main Variac knob is dialed to its zeroed out position before connecting output terminals.
3. If either of the two Overloads is tripped, close the switch to reset the AC output breaker or replace the DC output fuse.
4. Verify power is off and then connect the output supply via the two sets of binding posts depending on whether AC or DC will be used and hook up the component to be tested with the leads provided.

#### Operation

5. Turn on main circuit breaker switch to power on unit. Note indicator light comes on.
6. Slowly raise the output voltage by turning the Main Variac clockwise until the desired output voltage or current is reached for the intended application or test.
7. Upon completion of testing, turn off main power by switching off the main breaker before disconnecting the output leads from the test component.
8. **WARNING:** For safety reasons, dial back the Main Variac knob to its zeroed-out position before and after each use.

## OPERATION AND CALIBRATION

### CALIBRATION

Your VMS-3 portable power supply itself does not require any calibration for normal operation. The onboard digital Voltmeters and Ammeters will also hold their normally calibrated settings during the lifetime of your VMS-3 for all normal indoor operations. In the rare case that any 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."

## 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. 9907020	VMS-3 Electrical Schematic

## SECTION 6: VMS-3 PARTS LIST

QTY.	ITEM #	PHENIX PART #	DESCRIPTION
1	CASE	2100479	CASE
1	BRIDG1	1789205	BRIDGE RECTIFIER
1	PWR CORD	1077164	16/3 PWR CORD 10 FT
1	C1	1094520	CAPACITOR, 3Uf, 400V
1	CB1	1601310	CKT BRKR
1	CB2	1601423	CKT BRKR
1	CM1 (AC)	1506512	CURRENTMETER, AC
1	CM2 (DC)	1506513	CURRENTMETER, DC
1	CON 1	1153328	RECEPT, 15A, 250V
2	CON 2,5	1351100	BINDING POST, BLACK
1	CON 3	1351104	BINDING POST, WHITE
1	CON 4	1351102	BINDING POST, RED
2	CON 2,4	1353040	GATOR BT, RED
2	CON 3,5	1353041	GATOR BT, BLACK
4	CON 2-5	1353042	GATOR CLIP
2	CON 3,5	1356212	MULTILAM PLUG, BLACK 4mm
2	CON 2,4	1356213	MULTILAM PLUG, RED 4mm
3	F1-3	1603601	FUSE, AGC-1
3	F1-3	1603910	ONE POLE FUSEBLOCK
1	F4	1603605	FUSE, AGC-5
1	F4	1603920	FUSEHOLDER
1	LP1	1432270	NEON LAMP, AMBER
1	R1	1742195	RESISTOR, 25W,10K
1	SH1	1509895	SHUNT
1	SW1	1865021	TOGGLE, DPDT
1	T1	1890209	VARIABLE XFMR
1	VM1 (AC)	1506511	AC VOLTMETER, 200 VAC
1	VM2 (DC)	1506514	METER, 200VDC

**SECTION 7: RECOMMENDED SPARE PARTS**

QTY.	PHENIX PART #	DESCRIPTION
4	1603601	AGC-1 Fuse
5	1603605	AGC-5 Fuse
1	1423270	Neon Lamp Amber
2	N/A	Output lead wires
2	1356212	Multilamm Plug Black
2	1356213	Multilamm Plug Red
4	1353042	Gator Clip – 20 Amp
2	1353041	Gator Clip Boot Black
2	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](mailto: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](mailto:info@phenixtech.com)