

## USER'S GUIDE

MODEL: 750-20  
PART NO.: DS14-3060



**WARNING:** This publication describes a product engineered and designed to supply HIGH VOLTAGE. Accordingly, maximum safeguards have been built into the equipment and the best safety techniques possible are set forth in the unit's operating instructions. These instructions contain cautions, warning the user to exercise great care in the use of certain controls and at appropriate points in the operating procedures. Despite these written warnings the operator of this equipment is nevertheless strongly advised to maintain a safety consciousness at all times. The following rules are particularly relevant and must be followed at all times.

**BEFORE CONNECTING INPUT POWER, GROUND CASE.**

**BEFORE UNGROUNDING CASE, DISCONNECT POWER.**

**NEVER APPROACH OR TOUCH A POTENTIALLY LIVE HIGH VOLTAGE CIRCUIT WITHOUT CONNECTING AN APPROPRIATE SOLID GROUND FIRST.**

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## I. SCOPE

This manual describes the Hipotronics Model 750-20 Dielectric Test Set. It is intended to provide a simplified reference for users of this equipment, and allow them to make use of its features quickly, safely and efficiently.

The publication contains eight (8) major sections as described below:

SPECIFICATIONS AND GENERAL DESCRIPTION which gives the model's specifications and a general description of HIPOTRONICS' AC Dielectric Test Set.

FEATURES AND OPTIONS which lists the standard features of the model plus applicable options.

CONTROLS AND INDICATORS which describes the major features of the model plus a description of the functions performed by each of the controls and indicators.

INSTALLATION AND PRE-OPERATION INSTRUCTIONS which provide step-by-step instructions for setting up the unit for operation.

OPERATION INSTRUCTIONS which provides instructions for performing insulation tests.

SPECIAL OPERATIONS which explains the procedures involved in Meter Recalibration.

TROUBLE SHOOTING GUIDE which lists recommended solutions to possible problems which may arise.

MAINTENANCE which describes methods of keeping the unit in proper working condition.

## II. SPECIFICATIONS AND GENERAL DESCRIPTION

MODEL NO: 750-20  
PART NO: DS14-3060

### SPECIFICATIONS

Input: 480 V ac, 60 Hz, 50 amp  
Output: 50 kV ac @ 20 kVA *.4 Amps*  
Distortion: less than 5%  
Duty: 20 kVA @ 1 hour, 15 kVA continuous  
Kilovoltmeter: 0-10/25/50 kV ac, 2% accuracy  
Current Meter: 0-400 mA ac, 2% accuracy  
Control Size: 23"W x 24"D x 51"High  
Tank Size: 21" Diam. x 32" High

### GENERAL DESCRIPTION

HIPOTRONICS' AC Dielectric Test Sets are ruggedly designed systems engineered especially to provide ac test power for a variety of capacitive inductive or resistive loads. Each unit is engineered and built for a long lifetime of service.

We at HIPOTRONICS are keeping pace with new engineering solutions and more reliable dielectric testing methods to meet the needs of industry. All of our insulation testers are conservatively designed to ensure highest quality and dependability. The most advanced techniques have been used to more than comply with the growing reliability standards imposed by the industry. Also, years of engineering experience have made it possible to manufacture test sets with ease of operation and operator safety an integral consideration in every design.

Where supplied, corona free (partial discharge) units are designed for extremely low noise levels. Each high voltage component undergoes the strictest processing controls employed today so that long stable operation is maintained in our AC Dielectric Test Sets.

### III. FEATURES AND OPTIONS

#### FEATURES:

- Continuously adjustable output
- Continuously adjustable overload from 25-100% of rated current
- "Zero Start" interlock
- External interlock provisions
- Triple-range voltmeter, output connected
- Single-range current meter
- Backup overload breaker
- Meter recalibration potentiometers (if applicable)
- HV "ON" and "OFF" pushbuttons
- Indicator Pilot Lights: Main Power, Control Power, HV ON, Intlk Open, and Overload

#### OPTIONS (Checked if Applicable)

- Corona Detection Equipment
- Motorized Output Control, single speed
- Motorized Output Control with 10:1 range of adjustment
- "HV ON" Dwell Timer
- Memory kV Meter
- Completely Automatic Test Programming
- Burn Feature
- Tapped Secondary
- Test Fixtures and Jigs
- HV Warning System
- Other:

#### IV CONTROLS AND INDICATORS

The functions and uses of the various controls and indicators are described below.

##### MAIN POWER CIRCUIT BREAKER

The MAIN POWER circuit breaker, installed in all units with a power rating above 2 kVA, supplies input power to the system. The breaker serves as the primary overload protection device for the system and, as such, its limitations should be noted before installing the system. Each circuit breaker is rated for the input voltage and maximum current under normal operating conditions. Under fault conditions, the current input of the system must be coordinated with source power that will not supply excessive amounts of fault currents which may cause the circuit breaker to fail and result in serious damage to the system.

##### CONTROL POWER CIRCUIT BREAKER

The CONTROL POWER circuit breaker, installed in all units above 5 kVA, serves both as a switch and protection device for the control circuitry. All control circuitry has a maximum voltage level of 120 V ac for operator safety. The control power indicator will light when the control power circuit breaker is energized.

##### BACKUP CIRCUIT BREAKER OR INTERNAL DASHPOT

In every system a "backup" circuit breaker or magnetic dashpot is installed in series with the primary of the high voltage transformer to detect excessive current levels in the winding. The power rating of the system determines whether a dashpot or circuit breaker will be used. The dashpot has the added advantage of being an adjustable overload device which enables the operator to select his maximum allowable primary current level for each test situation. Excessive current will cause either device to activate and de-energize the high voltage transformer.

##### SECONDARY CONNECTED OVERLOAD

The secondary connected current overload circuitry serves as the first overload for the system. Any excessive amount of current flowing in the test loop will activate the circuit and de-energize the high voltage transformer. The circuitry will activate in approximately 100 u sec and deactivate the system in approximately 3-10 cycles, depending on the main contactor size. If an overload occurs while testing, the high voltage will be de-energized and the red indicator will light. To resume testing the RESET button must be depressed and high voltage re-energized.

The sensitivity potentiometer allows the operator to adjust the maximum allowable current between 10% and 110% of the rated output current.

#### EXTERNAL INTERLOCK PROVISION

Each system is supplied with terminals at the rear of the control cabinet, which enable the operator to install safety interlocks in his test area and coordinate them with the set. When these interlocks are open it will be impossible to energize the high voltage transformer. An Interlock Open Lamp is provided to indicate to the operator that the interlock system is not secure.

#### HIGH VOLTAGE ON AND OFF

The high voltage ON pushbutton, when depressed, activates the main contactor, K1, and energizes the high voltage transformer. All units are supplied with a zero start feature which prohibits the operator from energizing the high voltage transformer unless the voltage regulator is set in the zero position. The red ON indicator will light when the high voltage transformer is activated. The high voltage OFF pushbutton, when depressed, deactivates the high voltage transformer.

#### VOLTAGE CONTROLS

On manual control systems the "RAISE VOLTAGE" control knob is located in the center of the control panel. The markings, 0-100, indicate at what percentage of the output voltage the transformer is excited to. The knob must always be returned to the zero position at the end of each test before deactivating the high voltage transformer.

On motorized systems, the voltage regulator is motorized and Raise and Lower pushbuttons are provided for the control of the output voltage. An "OFF ZERO" light is also provided to indicate that the regulator is returning to the zero position when the high voltage has been de-energized.

#### OUTPUT VOLTMETER AND CONTROLS

The output voltmeter registers the high voltage output in kilovolts and is an average responding device. On systems rated from 0-100 kV the meter is connected to the output through a high impedance resistor used to simulate a current source. On systems rated above 100 kV output, the output bushing capacitance tap is used as a high voltage capacitive divider which drives the voltmeter. The low arm signal is kept below 120 V ac for operator safety.

All systems are provided with a three range meter for greater accuracy in readings at lower voltage levels. The range switch is located directly below the meter and the LOW, MED and HIGH positions correspond to the similar scales on the meter.



## OUTPUT CURRENT METER AND CONTROLS

The output current meter registers the current flowing in the test loop. The low end of the high voltage transformer is isolated from ground by approximately 20 volts. This signal is used to drive the current meter and associated overload circuitry. On systems which are rated above 1 amp output current, a current transformer is placed in the return circuit to reduce the current in the metering circuit to more appropriate levels. All circuitry is protected from high voltage transients by the means of gas filled spark gaps and neon tubes. Heavier kVA units will sometimes have a current transformer and ammeter in the primary. This ammeter is calibrated in secondary current thus eliminating the secondary resistor, or CT.

## OPTIONAL CONTROLS

### VARIABLE RATE OF RISE

The variable rate of rise control enables the operator to select the rate at which the output voltage will rise. The rate is adjustable over a 10:1 range.

### SURGE ON

The surge on feature enables the operator to bypass the zero start interlock and turn on at a specified output voltage level. The actual output level will vary according to load conditions and the transformer impedance.

### BURN

The burn feature allows the operator to burn a fault in the test sample to destruction by limiting the input current to the rated input level. The limiting of the current enables the system to power follow into the fault without tripping the overload circuitry.

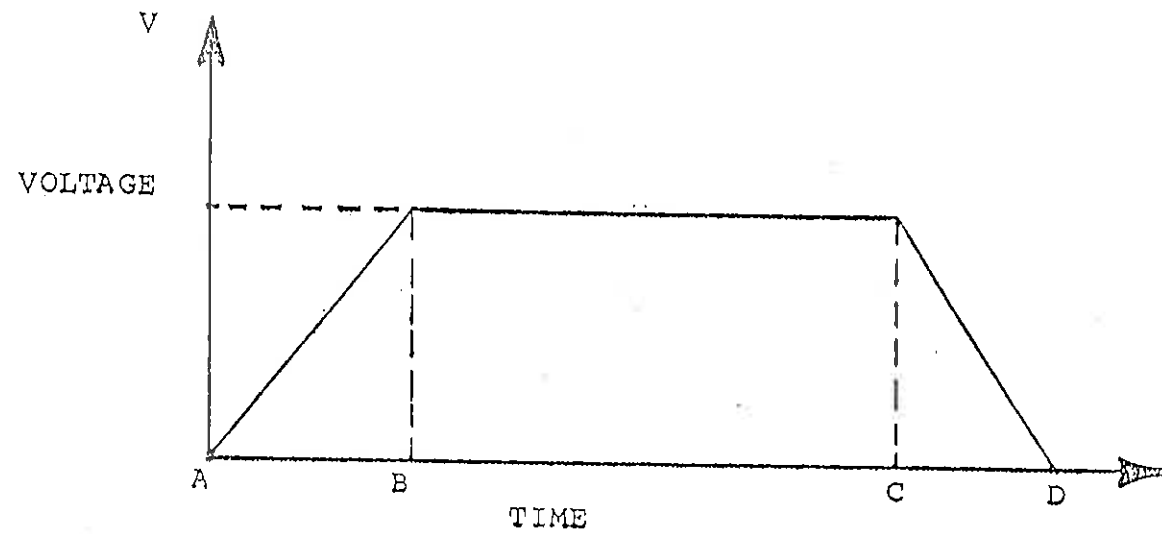
### METER RELAYS

Meter relays can be used for voltage and current limitations or preselection. When an overvoltage and/or overcurrent meter relay is used as a limiting device, the corresponding indicator will light when the relay is activated and high voltage will be deactivated. When the relay is used for preselection the output level will rise no further, thus protecting the load from overvoltage or overcurrent levels. Rapid rates of rise may cause the levels to overshoot the relays. Judgement must be used when selecting the rate of rise so as to limit this overshoot by setting the relays somewhat below the desired test level.

### AUTOMATIC OPERATION

The automatic mode of operation enables the operator to raise to a set level at a uniform rate of rise, dwell at a specific level for a predetermined amount of time, and return to zero at the same rate. A typical curve is shown on the following page where the above sequence is used.





<u>POINT</u>	<u>SEQUENCE OPERATION</u>
A	HV activated - begins to rise
B	Preset limit is reached, dwell timer turns on
C	Dwell Timer times out, voltage regulator begins to lower
D	Voltage output reaches zero, HV turns off

If failure occurs during the test time, the time at which it occurred will remain registered on the timer until the reset button is depressed. button is depressed.

#### MEMORY METER

The memory meter is used to register the voltage at which a failure in the test sample has occurred. This value will remain displayed until the RESET button is depressed. This feature is incorporated into the voltmeter.

#### DWELL TIMER

The dwell timer allows the operator to preselect a test duration at a specific test voltage. Most often, the timer is incorporated in an "automatic" mode of operation allowing a total test sequence to take place without excessive operations being carried out by the user. A buzzer may also be incorporated into the circuit which alerts the operator that the test time has run out.

## V INSTALLATION AND PRE-OPERATION INSTRUCTIONS

After installation, a pre-operation test is recommended before any high voltage connections are made. This test is similar to the final test prior to shipment and assures that no shipping damage or deterioration has occurred during transit or storage.

1. Locate each piece of the system in its appropriate location observing clearances for the maximum output voltage of the system. Approximately 5 kV peak per inch can be used between smooth surfaces. Rough edges should be avoided as corona and field distortion will result causing difficulty with testing.
2. Interconnect all appropriate cables as shown on the accompanying interwiring diagram. Ensure that each piece of the system is securely grounded before installing the input cable to the power source. DO NOT CONNECT THE PRIMARY LEADS TO THE HIGH VOLTAGE TRANSFORMER.
3. Check all auxiliary interlocks to ensure that the system is secure.
4. Energize the MAIN POWER circuit breaker. The indicator will light up when the breaker is activated.
5. Energize the CONTROL POWER circuit breaker if applicable.
6. If the voltage regulator is manually driven, return it to zero by rotating the control knob counterclockwise. If the regulator is motorized and "off zero", the indicator will light until the regulator has returned to the zero position and is ready for operation.
7. Activate the "Backup" circuit breaker. Ensure that all of the safety features are now secure and the system is ready for operation.
8. Energize the High Voltage control circuitry by depressing the High Voltage "ON" button.
9. Raise the voltage control observing the output voltage of the regulator with a suitable ac voltmeter. The voltage should be at least 100% of the input voltage of the system.
10. Return the regulator to the zero position and de-energize the system. Connect the primary leads to the high voltage transformer.
11. Set the overload sensitivity control so that the unit trips at the desired current level. (See Special Operations section for details.)
12. The system may now be operated at high voltage.

## VI OPERATION INSTRUCTIONS

This section provides step-by-step instructions for performing tests for the supplied system. Prior to performing any of these functions, the procedures detailed in the installation and pre-operation section must be completed. Ensure that the main circuit breaker is in the "OFF" position.

### MANUAL OPERATION

1. Connect the low end of the test sample to ground with a conductor large enough to carry the rated output current of the system. Connect the high end of the test sample to the output bushing of the transformer. In general, aluminum or copper pipe is the easiest material to use for this purpose. A minimum size of 1 inch OD per 100 kV rms should be used. All surfaces must be kept smooth and free of any sharp edges.
2. Energize the MAIN POWER circuit breaker, CONTROL POWER circuit breaker, and BACKUP circuit breaker, if applicable.
3. Select the appropriate voltage and current ranges for meter readings. The ranges should be set so the levels will be in the upper 1/3 of the scale.
4. Energize the high voltage transformer by depressing the "High Voltage ON" pushbutton.
5. Raise the output voltage to the desired test level by rotating the control knob on the front panel clockwise until the specified voltage is reached. If the system has a motorized voltage regulator, the voltage can be raised by depressing the "Raise" voltage pushbutton.
6. When the test is complete return the voltage control knob to the zero position and depress the "High Voltage OFF" pushbutton, de-energizing the high voltage transformer. If the system is motorized, the "LOWER" pushbutton should be used to return the regulator to the zero position before de-energizing the system.

#### AUTOMATIC OPERATION

1. Connect the low end of the test sample to ground with a conductor large enough to carry the rated output current of the system. Connect the high end of the test sample to the output bushing of the transformer. In general, aluminum or copper pipe is the easiest material to use for this purpose. A minimum size of 1 inch OD per 100 kV rms should be used. All surfaces must be kept smooth and free of any sharp edges.
2. Energize the MAIN POWER circuit breaker, CONTROL POWER circuit breaker, and BACKUP circuit breaker, if applicable.
  - A. Analog meters
  - B. Digital meters - Set meter relay. While depressing DISPLAY button, rotate SET knob until desired voltage level is displayed on the voltmeter. Release DISPLAY button.
3. Select the appropriate voltage and current ranges for meter readings. The ranges should be set so the levels will be in the upper 1/3 of the scale. SET METER RELAY RED POINTER TO DESIRED TEST LEVEL.
4. Switch the mode switch to the "AUTO" position.
5. Energize the high voltage transformer by depressing the "High Voltage ON" pushbutton.
6. The voltage will rise at a uniform rate to the preset level. When it reaches this point the dwell timer will turn on beginning the test duration at this voltage. At the end of the prescribed time the voltage will lower at the same rate to zero and the high voltage transformer will be de-energized.

#### NOTE:

If a fault occurs while testing, the secondary connected overload circuitry will activate causing the High Voltage circuitry to be de-energized. The power control knob must be returned to the zero position and the "RESET" pushbutton depressed before activating the system again. In a motorized system the regulator will automatically return to the zero position.

## VII SPECIAL OPERATIONS

This section describes the step-by-step procedures required to perform special operations incidental to the major functions described in the preceding sections.

### METER RECALIBRATION

Meters on the HIPOTRONICS units have been calibrated with standards traceable to national standards maintained by the National Bureau of Standards in Washington, D.C. and are certified accurate to within 2% when shipped.

Meter recalibration should be performed by the user as often as necessary to meet the requirements of each particular installation, as dictated by usage and by the user's standards for accuracy.

Access to calibration potentiometers is through the front panel holes below the meters.

CURRENT METER (Some units do not contain current meter recalibration provisions)

1. Ensure that the unit is properly grounded.
2. Connect a suitable 1% standard current meter between the high voltage output and ground.
3. An additional series resistor may be connected in series with the standard meter to provide better adjustment resolution while calibrating.
4. Turn on all the circuit breakers and depress HV pushbutton.
5. Raise the output current to approximately two-thirds full scale on the lowest scale.
6. Adjust the front panel meter with the potentiometer labeled CM CAL to correspond to the standard meter reading. Other ranges should track within 2%.

### VOLTMETER

1. Ensure that the unit is properly grounded.
2. Connect a HIPOTRONICS standard kilovoltmeter across the output of the HV transformer and set the range switch to the middle position.
3. Turn on all circuit breakers. Depress the HV ON button.
4. Raise the output voltage to approximately two-thirds full scale.
5. Adjust the front panel meter with the potentiometer labeled VM CAL to correspond to the standard meter reading.

#### SETTING THE OVERLOAD

1. Insert a resistive load simulating 10% of acceptable resistance of the test sample between the high voltage output and ground.
2. Set the SENS potentiometer to MIN.
3. Turn on the circuit breakers and depress the HV ON button.
4. Increase the voltage with the RAISE button to the desired overload current level.
5. Rotate the SENS potentiometer counterclockwise until the overload trips shutting off the high voltage.
6. Depress the HV OFF button and turn OFF the circuit breakers.
7. The unit is now calibrated for a specific current level.

VIII TROUBLE-SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	RECOMMENDED SOLUTION
NO MAIN POWER INDICATION	A. Faulty input connection B. Blown fuses C. Blown bulb	A. Check and secure all input connections B. Replace fuses C. Replace bulb
NO CONTROL POWER INDICATION	A. Faulty circuit breaker B. Blown bulb	A. Replace breaker B. Replace bulb
UNABLE TO ACTIVATE HIGH VOLTAGE	A. Open interlock system B. Open backup circuit breaker C. Current overload activation D. Voltage regulator off zero	A. Check and secure all interlocks B. Close circuit breaker C. Depress RESET button D. Return regulator to the zero position
NO HIGH VOLTAGE OUTPUT	A. Bad interconnections of HV transformer B. No primary voltage C. No regulator drive	A. Check & secure all interconnecting leads. B. Visually check the main contactor for closing C. Check variable speed setting
NO METER READINGS	A. Faulty connections	A. Check and replace interconnecting cables
CONSULT FACTORY IF PROBLEMS NOT LISTED OCCUR		



## IX MAINTENANCE

### CLEANING OF EQUIPMENT

The painted surfaces and control panel should be cleaned with a damp cloth and a mild detergent. The solution must not come in contact with the electrical circuitry. Meter faces and acrylic parts should be cleaned with a residue free agent such as freon or trichloroethane. Periodically, the interior of the unit should be blown out with water-free, filtered compressed air. This will prevent dust build-up and extend the operating life of the equipment.

### TRANSFORMER OIL

The HV tank oil level should be maintained. A minimum of 1" of space should be allowed from the oil level to the header for every 30" of height at 25 deg.C. In the event oil must be added, TEXACO #55 uninhibited transformer oil or equivalent should be used. ASTM Standards concerning oil dielectric breakdown limits should be observed. Tests should be performed at least annually using a HIPOTRONICS' Liquid Dielectric Tester Model OC50 or equivalent. These tests should be performed by qualified personnel only as serious damage may result from contamination. Oil dielectric strength should be at least 22 kV with standard 0.1" disk electrodes.

### METER FACES

When meter acts erratically clean face with an anti-static solution such as Crown™ or Statnul™.

## WARRANTY

HIPOTRONICS, INC. warrants to the original purchaser of any new merchandise that the merchandise is free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment. The obligation of Hipotronics, Inc. under this Warranty is limited, in its exclusive option, to repair, replace or issue credit for parts or materials which prove to be defective, and is subject to Purchaser's compliance with the Hipotronics, Inc. Warranty Claim Procedure as set forth below. The happening of any one or more of the following events will serve to void this Warranty and any defect or damage resulting therefrom is specifically excluded from Warranty coverage: (a) defects due to accident, negligence, alteration, modification, faulty installation by Purchaser or Purchaser's agents or employee, abuse or misuse; (b) attempted or actual dismantling, disassembling, service or repair by any person, firm or corporation not specifically authorized in writing by Hipotronics, Inc. (c) defects caused by or due to handling by carrier, or incurred during shipment, transshipment or other move.

This Warranty covers only those parts and/or materials deemed by Hipotronics, Inc. to be defective within the meaning of this Warranty. The liability of Hipotronics, Inc. shall be limited to the repair, replacement or issuance of credit for parts deemed defective within the meaning of this Warranty. Costs incurred by purchaser for labor or other expenses incidental to the inspection, repair, replacement or issuance of credit for such parts and/or material shall be the sole responsibility of purchaser. This Warranty shall not apply to any accessories, parts, or materials not manufactured or supplied by Hipotronics, Inc. and if, in the sole discretion of Hipotronics, Inc., Purchaser's claim relates to any materials or workmanship manufactured or performed by the supplier of a component part, or of the manufacturer of a device of which the defective part is a component, Hipotronics, Inc. reserves the right to disclaim liability under this Warranty and to direct that the Purchaser deal directly with such supplier or manufacturer. Hipotronics, Inc. agrees to assist the Purchaser in processing or settling any such claim without prejudicing its position as to liability.

### WARRANTY CLAIM PROCEDURE

Compliance with the following Warranty claim Procedure is a condition precedent to the obligation of Hipotronics, Inc. under this Warranty:

- a. Purchaser must notify Hipotronics, Inc. in writing by certified or registered mail, of the defect claimed within twelve months after date of original shipment. Said notice shall describe in detail the defect, the defective part, and the alleged cause of defect.

- b. At the exclusive option of Hipotronics, Inc., Purchaser shall dismantle or disassemble at Purchaser's cost and expense and shall ship the defective part or material prepaid to Hipotronics, Inc., Brewster, New York 10509, for inspection, or permit an authorized service representative of Hipotronics, Inc. to inspect the defective part or material at Purchaser's premises. If Hipotronics, Inc. shall inspect the part or material at the Purchaser's premises, Purchaser shall provide facilities for, and at Purchaser's cost and expense, dismantle, disassemble, or otherwise make accessible the subject part or material whether or not same is a component of or installed in a device other than that manufactured or supplied by Hipotronics, Inc. If disclosure shows that the defect is not one for which Hipotronics, Inc. is liable, the Purchaser agrees to reimburse Hipotronics, Inc. for all expense incurred.
- c. Upon receipt of the defective part or material, or after access to same, Hipotronics, Inc. shall inspect the part or material to determine the validity of Purchaser's claim.

The validity of any Warranty Claim, Purchaser's compliance with Hipotronics, Inc. Warranty Claim Procedure, the obligation to either repair, replace, or issue credit, or direct the purchaser to deal directly with a manufacturer or supplier are to be determined solely and exclusively by Hipotronics, Inc. and any determination so made shall be final and binding.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED ON THE PART OF HIPOTRONICS, INC., INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE, AND CONSEQUENTIAL DAMAGES ARISING FROM ANY BREACH THEREOF AND HIPOTRONICS, INC. NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON, FIRM OR CORPORATION TO ASSUME ANY LIABILITY OR OBLIGATION IN CONNECTION WITH THIS SALE ON ITS BEHALF AND PURCHASER ACKNOWLEDGES THAT NO REPRESENTATIONS EXCEPT THOSE MADE HEREIN HAVE BEEN MADE TO PURCHASER.

HIPOTRONICS, INC., Brewster, NY 10509

**PARTS LIST**

MODEL NO: 750-20  
PART NO: DS14-3060

Page 1

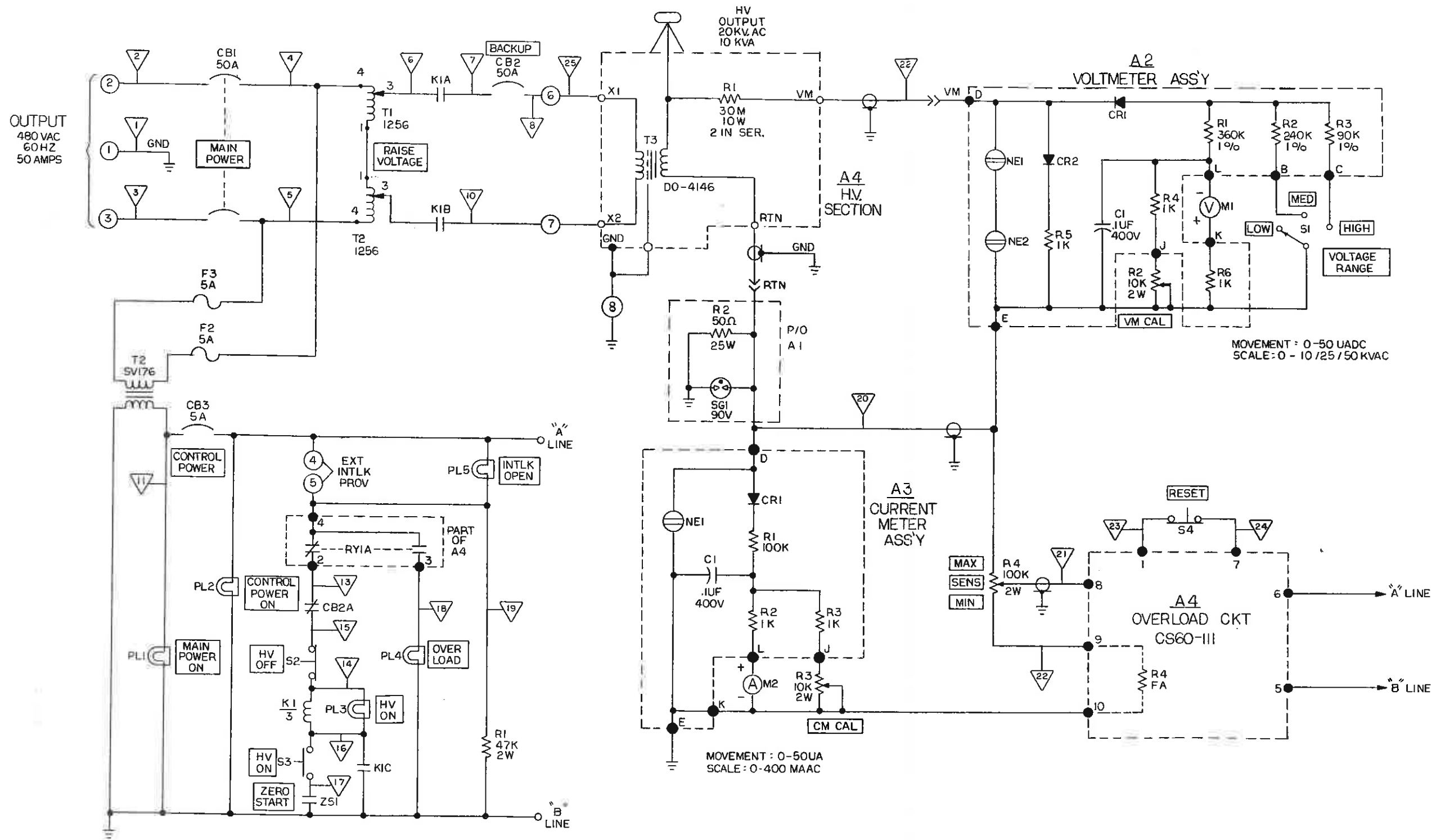
<u>REF.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
A1	Subassembly, High Voltage, Hipotronics	
A2	Subassembly, Voltmeter, Hipotronics	30-352
A3	Subassembly, Current Meter, Hipotronics	30-352
A4	Subassembly, Overload, Hipotronics	60-111
CAB	Cabinet, 43 3/4" x 19" x 24", EES	
CB1	Circuit Breaker, 50 amp, ABB	ESB42050L
CB2	Circuit Breaker, 50 amp, Heinemann	CD1-Z139-1
CB3	Circuit Breaker, 5 amp, Heinemann	AM1-A3-A
F1,2	Fuse Holder w/5 A, 600 V ac Fuse	2808 KTK5
K1	Relay, Rowan	2200
M1	Meter, 50 uA, w/0-10/25/50 kV ac scale, API	7045
M2	Meter, 50 uA, w/0-400 mA ac scale, API	7045
PL1-4	Pilot Light, Drake w/Lamp	75AP 6S6
PL5	Pilot Light, Drake w/Lamp	5100-832 NE51H
R1	Resistor, 47 k ohm, 2 W, 10%	
R2,3	Resistor, Pot., 10 k ohm, 2 watt	
R4	Resistor, Pot., 100 k ohm, 2 watt	U40
S1	Switch, Rotary, CRL	PA2002
S2,4	Switch, Pushbutton, Unimax	ABB
S3	Switch, Pushbutton, Unimax	ABB1
T1,2	Transformer, Powerstat, Superior	1256
T3	Transformer, Hipotronics	SV-176

PARTS LIST

MODEL NO: 750-20  
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Page 2

<u>REF.</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
<u>A1</u>	<u>HIGH VOLTAGE ASSEMBLY</u>	
BG1	Bushing, Hipotronics	Mold #220
R1	Resistor, 30 M ohm, 10 W, 2 in series	
R2	Resistor, 50 ohm, 25 watt	
SG1	Spark Gap, 90 volt, Siemens	B1-F90
T1	Transformer, Hipotronics	DO-4146
<u>A2</u>	<u>VOLTMETER ASSEMBLY</u>	
PCB	FAB, Hipotronics	30-352
C1	Capacitor, .1 uF @ 400 V dc	
CR1,2	Diode	1N4007
NE1,2	Neon	NE2
R1	Resistor, 360 k ohm, 1/2 W, 1%	
R2	Resistor, 240 k ohm, 1/2 W, 1%	
R3	Resistor, 90 k ohm, 1/2 W, 1%	
R4-6	Resistor, 1 k ohm, 1/2 W, 10%	
<u>A3</u>	<u>CURRENT METER ASSEMBLY</u>	
PCB	FAB, Hipotronics	30-352
C1	Capacitor, .1 uF @ 400 V dc	
CR1	Diode	1N4007
NE1	Neon	NE2
R1	Resistor, 100 k ohm, 1/2 w, 10%	
R2,3	Resistor, 1 k ohm, 1/2 W, 10%	



- NOTES:
1. INPUT AND FUNCTION SWITCHES SHOWN WITH POWER "OFF".
  2. INTERLOCKS AND OVERLOAD CONTACTS SHOWN CLOSED FOR EASE IN TROUBLE SHOOTING.
  3. "A" AND "B" LINES SUPPLY CONTROL POWER AND UNLESS OTHERWISE SPECIFIED, CARRY 115VAC.
  4. BOXED ITEMS INDICATE FRONT PANEL MARKINGS.
  5. DENOTES TERMINAL BOARD CONNECTIONS.
  6. DENOTES P/B BOARD CONNECTIONS.
  7. DENOTES WIRE NUMBERS.
  8. UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE  $\frac{1}{2}W \pm 10\%$ .
  9. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN "UF".
  10. FOR INTERWIRING DIAGRAM SEE DRAWING NO. BW14-3063

QTY	DESCRIPTION	PART NO	MAT L OR NOTE	ITEM
	AC DIELECTRIC TEST SET			
		BREWSTER, N.Y.		
MODEL NO. 750-20		DATE 9-81		
DWG NO. DS14-3060		REV.		
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DO NOT SCALE DWG TOLERANCES		APPROVED: [Signature]		
FRACTIONS ± 1/64	DECIMALS ± .005	ANGLES ± 30'	SCALE	SHT / OF /

4

3

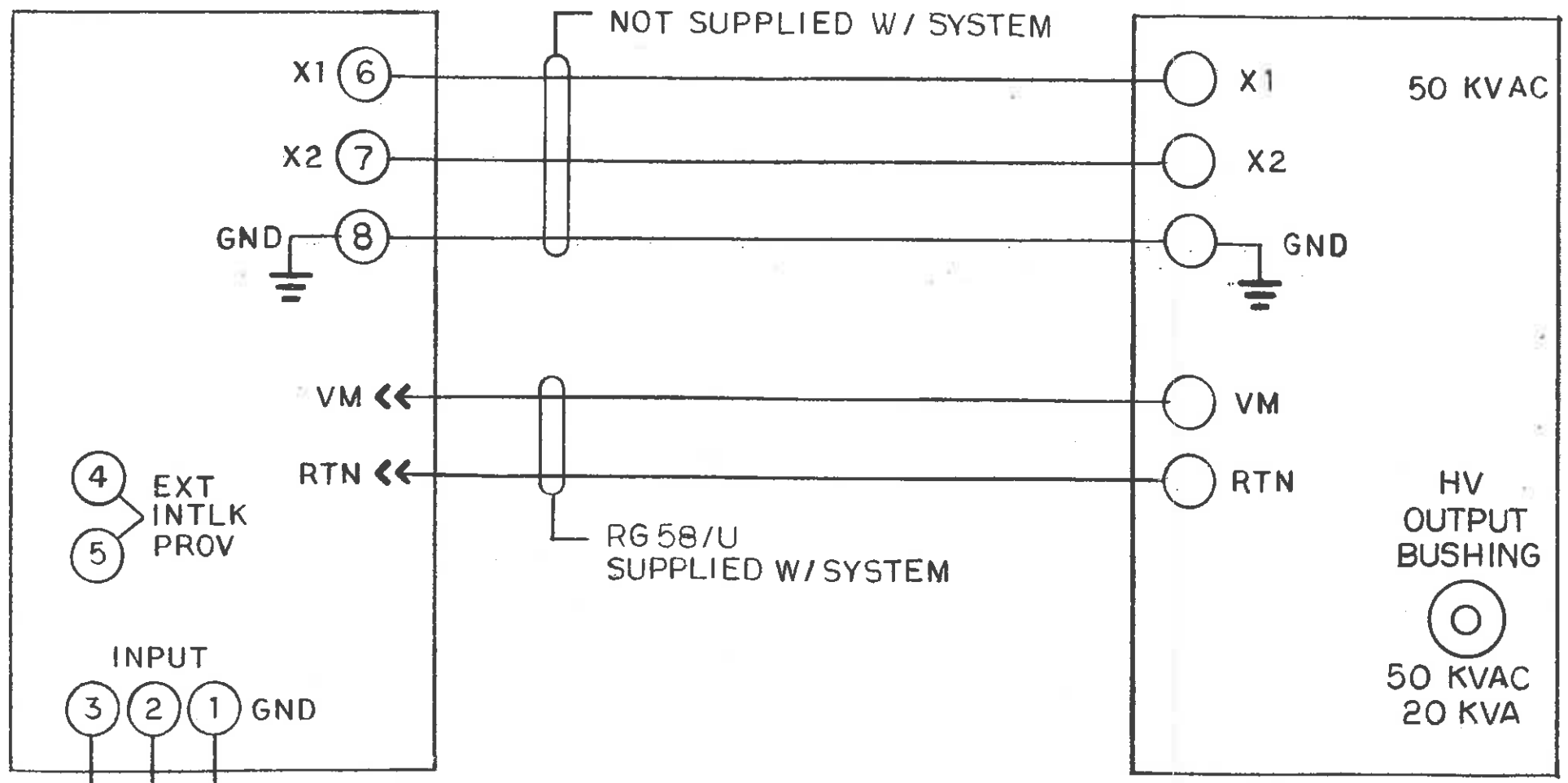
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REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

### CONTROLS


### HV SECTION



#8 AWG 600 VAC  
NOT SUPPLIED W/SYSTEM

480 VAC  
50 AMPS  
60 HZ

FOR MAIN SCHEMATIC SEE : DS14-3060

QTY	DESCRIPTION	PART NO.	MAT'L OR NOTE	ITEM		
INTERWIRING DIAGRAM		 BREWSTER, N.Y.				
MAT'L	NEXT ASSY	MODEL NO.	750-20			
FINISH	UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES DO NOT SCALE DWG TOLERANCES		DRAWN T.K. 10/90	DATE 10/90	DWG NO. BW14-3083	
	FRACTIONS ± 1/64	DECIMALS ± .005	ANGLES ± 30'	APPROVED DAW 10-90	SCALE	SHT OF