

1505

Isolated Variable AC Line Supply Instruction Manual



**1505 ISOLATED
AC LINE S**

Instruc Manu

 **GLOBAL**
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PCB Components	FRONT PANEL
Reference Designator	Part Description

OUTPUT SOCKETS

SOCKET 1	European (230VAC)
SOCKET 2	American (115VAC)
SOCKET 3	SLBR4 (Leakage Red)

SWITCHES

SW1	ON/OFF SPDT 1801 10A/230V
SW2	DPDT Toggle 6A/250V

FUSE

F1	6Amp / 250V S/B
F2	5AMP / 250V S/B

FUSE HOLDERS

FH1	10Amp / 250V R3-11
FH2	10AMP / 250V R3-11

PCB Components	CHASSIS
Reference Designator	Part Description

TRANSFORMERS

T1	1506 Isolation
T2	1506 Current
T3	1506 DPM
T4	1506 0-120V/4Amp Variable
T5	1506 Voltage Sense

SECTION - 1 INTRODUCTION

ISOLATED VARIABLE AC LINE SUPPLY : MODEL 1505

The 1505 Isolated Variable AC Source cum leakage current tester is designed for modern electronics laboratories needing a clean, electrostatically and galvanically isolated variable line supply.

The unit is designed to provide isolated output variable from 0 to 130 V AC at 4 Amps max and 0 to 260VAC at 2A max on two separate output sockets through a range selector switch. The output voltage and load current can be monitored on a 3 digit DPM. The variable isolated output voltage capability makes this unit very convenient to use for either incoming or outgoing quality control testing. It is also useful for servicing or circuit design work, when checking operation at voltage higher or lower than normal. The unit consists of a super isolation transformer which is triple shielded from the line to protect against shock hazards.

The 1505 can measure power line leakage current by means of a probe and a switch selected range of the output DPM. It can measure leakage currents upto 9.99 mA. The unit is overload protected by means of an input/output fuse.

INITIAL INSPECTION

Before shipping, the 1505 power supply has been tested thoroughly and found free of mechanical and electrical defects. As soon as it is unpacked, inspect for any damage that may have occurred during transit. Particular attention should be paid to the meters. Also check the packing material for any signs of severe stress (may be indicative of internal damage). Save all the packing material. Read the INSTRUCTION MANUAL carefully prior to operation.

PCB Components	0893
Reference Designator	Part D

CAPACITORS

C1	220pf
C2	0.1µf
C3	0.01µf
C4	0.47µf
C5	0.1µf, 5
C6	10µf, 3
C7	0.1µf, 5
C8	0.1µf, 5
C9	Not us
C10	470µf,
C11	2.2µf, 5
* C12	47µf 5
* C13	0.1µf 5

DIODES

D1	1N4148
D2	1N4148
D3 TO D6	1N4001

TRANSISTORS/FET'S

Q1	TL431
Q2	MPSA
Q3	LM780

IC

IC1	ICL71
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FND'S

DS1	TSD56
DS2	TSD56
DS3	TSD56

LED'S

LED1	3mm C
LED2	3mm C

CONNECTORS

CON1	3 PIN 2.5
CON2 (L' Type)	7 PIN 2.5

PCB Components GLOBAL 1505 / 06 SW - 0396

Reference Designator	Part Description
<u>IC'S</u>	
IC1	7660 S
IC2	KA 741/ LM 741
<u>PUSHSWITCHES</u>	
SW1 TO SW3	4 Pole, 2 Way (Interlock)
<u>RELAY</u>	
RL1	2/P 2CO 6V/6A (OEN 58-06-2C)
<u>CONNECTORS</u>	
CON1	5 PIN 2.54 PITCH (MALE / FEMALE)
CON2	7 PIN 2.54 PITCH (MALE / FEMALE)

PCB Components 0893 DPM

Reference Designator	Part Description
<u>RESISTORS</u>	
R1	39K, ¼W, ±5%, MFR
R2	470K, ¼W, ±5%, MFR
R3	1ME, ¼W, ±5%, MFR
R4	SEL , ¼W, ±5%, MFR
R5	2.4K, ¼W, ±5%, MFR
R6	2.7K, ¼W, ±5%, MFR
R7	30K, ¼W, ±5%, MFR
R8	8.2K, ¼W, ±5%, MFR
R9	100E, ¼W, ±5%, MFR
R10	12K, ¼W, ±5%, MFR
R11	20K, ¼W, ±5%, MFR
R12	100E, ¼W, ±5%, MFR
R13	330E, ¼W, ±5%, MFR
R14	Not in Use
<u>PRESETS</u>	
PR1	2.2K Horizontal

**SECTION
SPECIFICATION**

INPUT VOLTAGE	: 115 VA
INPUT FREQUENCY	: 47Hz to
OUTPUT	: I : 0 to (Avail) II : 0 to (Avail)
METERING	: 3 digit 1) Out 2) Load 3) Load
METER ACCURACY	: ± 3 count
OUTPUT-LINE ISOLATION	: Capacitive
NOISE REJECTION	: Better than (comm)
DIMENSIONS	: 11.73"
WEIGHT	: 35 lb. a

SECTION - 3 DESCRIPTION

INPUT AND OUTPUT TERMINATION :

The unit works from 115VAC, 47Hz to 63Hz single phase supply with internal tap selection facility. The input is provided through a mains cable with a plug. The use of a three core cable enables the cabinet of the unit to be properly grounded.

The unit as shipped from factory is wired for 115V AC single phase supply

Output is provided on two separate sockets through a output voltage range selector switch. In one position, it provides 0 -130 VAC at 4A max whereas in other position, it provides 0-260VAC at 2Amp.max.

METERING :

One 3-digit DPM is provided to measure

- 1) Output voltage
- 2) Leakage current
- 3) Load current

Meter function is switch selectable

ON-OFF SWITCH AND FUSE :

The power ON-OFF switch is located on the front panel. The fuses (Input & Output) are also located on the front panel. The fuse ratings are clearly marked.

PANEL CONTROLS :

A voltage adjust knob allows adjustment of output AC voltage and the output voltage selector switch selects the output AC voltage range so as to provide 0 -130VAC isolated output only on American socket while 0 -260VAC isolated output only on European socket.

Three meter function push switches are provided to select the Leakage Current or Output Voltage or Output Current (mA, V & A respectively.) to be displayed on the meter.

CIRCUIT DESCRIPTION :

The circuit uses a step down transformer to provide step down supply to a single phase variable autotrans former to obtain an output voltage variable from 0 to 130VAC. This is followed by a triple shielded isolation transformer which provides an output voltage from 0-130VAC or 0-260VAC electrostatic and galvanic isolation.

Multiple shielding technique reduces primary to secondary static coupling to below 0.0005pF. The DC isolation is over 1000 M Ohms.

SECTION PART LIST

PCB Components	GLOB
Reference Designator	Part D
<u>RESISTORS</u>	
R1	1.5K,
R2	120E
R3	10K,
R4	62K,
R5	10 oh
R6	220 o
R7	Not U
R8	10K,
R9	100K
R10	10M,
R11	4.7K,
R12	10K,
R13	1.2M,
R15	470K
<u>CAPACITORS</u>	
C1	1µf, 5
C2	1µf, 5
C3	220µf
C4	220µf
C5	0.1µf,
C6	0.22µ
<u>PRESETS</u>	
PR1	100E
PR2	100E
PR3	100E
PR4	10K
<u>DIODES</u>	
CR1	1N400
CR2	1N414
CR1	1N414

SECTION - 5
SERVICE AND WARRANTY INFORMATION
FACTORY SERVICE AND REPAIR

Global Specialties will service and repair this instrument free of charge for a period of one full year, subject to the warranty conditions stated below.

To obtain a return merchandise authorisation (RMA) required for all returns, phone our Customer Service Department for a RMA and all shipping instructions :



GLOBAL SPECIALTIES
22820 Savi Ranch Parkway,
Yorba Linda, CA 92887
WWW.globalspecialties.com
800-572-1028

WARRANTY

Global Specialties warrants this device to be free from defective material or workmanship for a period of one full year from the date of original purchase.

Global Specialties under this warranty is limited to repairing the defective device when returned to the factory, shipping charges prepaid, within one full year from the date of original purchase. Units returned to Global Specialties that have been subject to abuse, misuse damage or accident, or have been connected, installed or adjusted contrary to the instructions furnished by Global Specialties, or that have been repaired by unauthorized persons will not be covered by this warranty.

Global Specialties reserves the right to discontinue models, change specifications price or design of this device at any time without incurring any obligation whatsoever.

The purchaser agrees to assume all liabilities for any damages and/or bodily injury which may result from the use or misuse of this device by the purchaser, his employees or agents.

This warranty is in lieu of all other representations or warranties expressed or implied and no agent or representative of Global Specialties is authorized to assume any other obligation in connection with the sale and purchase of this device.

Specifications subject to change without notice.

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CASE DISASSEMBLY

WARNING

Potentially lethal AC power is present when the unit is plugged into the AC outlet, even when the power is off. Always disconnect the power cord from the AC outlet before touching the fuse post on the inside of the case.

Should access to the inside of the unit be required:

1. Remove the line cord from the AC outlet.
2. To disassemble the case, remove the screws from the cover to the chassis and lift the cover off.
3. To reassemble the case, place the cover back on the chassis, align the screw holes, and replace the screws.

MAINTENANCE AND REPAIR

ADJUSTMENT

All circuitry is factory-calibrated. No user adjustments are required.

FUSE REPLACEMENT

Remove the line cord from the AC outlet. Using a screwdriver, remove the fuse holder cap. Replace the fuse of identical type and current rating.

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