M-00458

EDITION : 1 (JULY, 2012)

1315D
0-25V/5A, AC/DC POWER SUPPLY

Instruction Manual

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Know your Power Supply read the Manual prior to Operation.

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CAUTION NOTE

This power supply has been designed and tested in accordance with the safety requirements for electrical equipment for measurement,control and laboratory use. This manual contains important information and warnings which have to be followed by the user for his safety as well as safe operation of the unit. This power supply operates according to safety Class 'I' Standards.

SECTION - 1
GENERAL INFORMATION

DESCRIPTION :

This simple AC/DC power source is designed specifically for use in educational institutions. It can be used to demonstrate the concept of alternating and non-alternating voltages. It can also be used for simple experiments using lamps, resistances, etc. The unit has been provided with Voltmeter and Ammeter for AC / DC Voltage and current readings

SPECIFICATIONS :

AC Voltage :

Output voltage	
No Load	: 0V to 30V (nom)
Full Load	: 0V to 25V ±2V
Output current	: 5A max
Output protection	: 5A Circuit Breaker

DC Voltage :

No Load	: 0V to 40V
Full Load	: 0V to 25V ± 2V
Output voltage	: 0V to 25V (nom)
Output current	: 5A max
Output protection	: 6A Circuit Breaker
DPM V/A Selection	: 2Pole/2Way Push Sw.
Output Voltage	: 3 Digit LED Display (Green)
Output Current	: 3 Digit LED Display (Green)

General :

Input power	: 115V / 230VAC,60 Hz,single phase
Input Fuse 115/230V	: 2A /3A, 250V Slow Blow
Dimensions	: 235mm x 155mm x 295 mm. (W x H x D) approx.
Weight	: 10.0 Kg. approx.

PCB Components **Z-DPM/02**

Ref Designator	Value
IC	
IC1	ICL7107 CPL
VR1	TL431
FND	
DS1	GREEN FND COMMON ANODE
DS2	GREEN FND COMMON ANODE
DS3	GREEN FND COMMON ANODE
CONNECTORS	
J1	3PIN, 2.54MM MALE
J3	4PIN, 2.54MM MALE
R4	12H555 SPADE CONNECTOR.

GENERAL

Ref Designator	Value
SWITCHES	
SW1	ON / OFF SWITCH 6A, 125V, DPST, ILLUMINATED
SW2	2P2T 5A POWER SWITCH.
DIODE BRIDGE	10A / 600V
VARISTOR	20D 361 (230V). 20D Z131 (115V)
DIMMER	INPUT 2A / 115V AC OUTPUT 5A / 30V, AC
CIRCUIT BREAKER	5A / 125V AC 6A / 125V DC
FUSE HOLDER	FHB/02 10A/250V.
INPUT FUSE	2A / 250V, SLOW BLOW
TERMINAL	BTI-15N RED 12A x 1 BTI-15N BLACK 12A x 1 BTI-15N BLUE 12A x 2
TRANSFORMERS	CURRENT TRANSFORMERS DPM TRANSFORMERS
SPARE CARBON	

PCB Components	Z 2505/AC-(SPL) 0205
Ref Designator	**Value**
CAPACITORS	
C1	1µF, 50V, ELE
C2	1µF, 50V, ELE
C3	0.1µF, 50V, CD
C4	47µF, 50V, ELE
C4*	0.1µF, 50V, CD
C5	10µF, 50V, ELE
C6	470µF, 30V, ELE
C7	10µF, 50V, ELE
C8	0.1µF, 50V, CD
C9	0.1µF, 50V, CD
C10	220µF, 30V, ELE
C10*	0.1µF, 50V, CD
C11	10µF, 50V, ELE
C12	0.1µF, 50V, CD
ICs	
U1	UA7805
U2	UA7812
U3	UA7905

PCB Components	Z-DPM/02
Ref Designator	**Value**
RESISTORS	
R1	39K, ¼W, 5% MFR
R2	470E, ¼W, 5% MFR
R3	1MEG, ¼W, 5% MFR
R5	10K, ¼W, 5% MFR
R6	2.4K, ¼W, 5% MFR
R7	330E, ¼W, 5% MFR
R9	120K, ¼W, 5% MFR
PRESETS	
PR1	2.5K / 3K (HOR)
CAPACITORS	
C1	220pF, 50V, CD
C3	0.01µF, 50V, CD
C4	0.47µF, 50V, MP
C5	0.1µF, 50V, MP
C6	0.1µF, 50V, MP
C7	10µF, 50V, ELE
C7*	0.1µF, 50V, MP
C8	0.1µF, 50V, CD
C9	10µF, 50V, ELE
C10	0.1µF, 50V, CD

SECTION - 2
INSTALLATION

INITIAL INSPECTION :

As soon as the **1315D** variable AC/DC source is unpacked, inspect for any damages that may have occured during transit. Save all packing material until inspection is complete. If damage is found, notify the carriers immediately. Our authorised representative also should be notified.

PHYSICAL CHECK :

This check should confirm that there are no broken knobs. The cabinet and panel surfaces should be free of dents.

ELECTRICAL CHECK :

The **1315D** variable AC/DC source is shipped ready for bench operation. It is necessary only to connect the instrument to a rated input voltage 115V or 230VAC / 60 Hz / 5A source of power. To select the correct input voltage select tap selection switch at the rear panel and it is ready for operation.

INPUT POWER REQUIREMENTS :

The **1315D** variable AC/DC source may be operated continuously from a 115V or 230V AC / 60 Hz power sourc with the help of input selector switch at the rear panel.

REPACKING FOR SHIPMENT :

To ensure safe shipment of the **1315D** variable AC/DC source, it is recommended that the package designed for the instrument be used. The original packing material is reusable.

SECTION - 3
OPERATING INSTRUCTIONS

a) 1315D as AC supply :

Set output voltage to 0V by turning the variable control to minimum position (Anti Clockwise).

Set Power ON switch to apply input power. Adjust the voltage control to obtain the required output voltage. The variable control is a coarse control to adjust the output voltage with in 0-30V Connect the load at the AC output. The output voltage will be 25V after connecting 5A Load. The total load current should not exceed 5A for continuous operation.

In case of sustained overload, the overload trip operates to isolate the power supply from the load. When the overload is removed, the trip switch can be reset.

b) 1315D as DC supply :

Set output voltage to 0V by turning the variable control to minimum position (Anti Clockwise).

Set Power ON switch to apply input power. Adjust the voltage control to obtain the required output voltage at the Red & Black Terminals. The variable control is a coarse control to adjust the output voltage with in 0-40V. Connect the load at the DC output terminals. The output waveform is full-wave rectified DC output. The output voltage will be 25V approx after connecting 5A Load. The total load current should not exceed 5 A for continuous operation.

In case of sustained overload, the overload trip operates to isolate the power supply from the load. When the overload is removed, the trip switch can be reset.

c) Panel Meter :3 Digit DPM will read voltage & current of AC/DC outputs by selecting the Push Switch on the front panel to monitor respective Voltage & Current.

d) Indications :

Power ON will be indicated by illuminated ON/OFF Switch.

SECTION - 4
PART LIST

PCB Components **Z 2505/AC-(SPL) 0205**

Ref Designator	Value
RESISTORS	
R1	30K, ¼W, 5% MFR
R2	200E, ¼W, 5% MFR
R3	150E, ¼W, 5% MFR
R4	220E, ¼W, 5% MFR
R5	30E, ¼W, 5% MFR
R6	240E, ¼W, 5% MFR
R7	20E, ¼W, 5% MFR
R7*	680E, ¼W, 5% MFR
R8	100E, ¼W, 5% MFR
R9	100E, 2W, 5% MFR
DIODES	
D1	1N4007
D2	1N4007
BRIDGE	
BR1	1A / 100V, CSB-1
BR2	1A / 100V, CSB-1
BR3	1A / 100V, CSB-1
BR4	1A / 100V, CSB-1
RELAYS	
RLY1	58-12-2C 2P/2W 12V RELAY
RLY2	58-12-2C 2P/2W 12V RELAY
PRESETS	
VR1	100E
VR2	100E
VR3	100E
VR4	100E
CONNECTORS	
J1	3PIN, 2.54MM MALE
J3	2PIN, 2.54MM MALE
J4	4PIN, 2.54MM MALE
J5	8PIN, 2.54MM MALE
J6	3PIN, 2.54MM MALE
J7	3PIN, 2.54MM MALE
R7	12H555 SPADE CONNECTOR.