

EA3025A

HIGH CURRENT POWER SUPPLY ADAPTER

TRANSMILLE
SOLUTIONS IN CALIBRATION

EA3025A

HIGH CURRENT PSU ADAPTER

Operation Manual

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Transmille's obligation under this guarantee is limited to replacement or repair of an instrument which is returned to Transmille within the warranty period. If Transmille determines that the fault has been caused by the purchaser, Transmille will contact the purchaser before proceeding with any repair.

To obtain repair under this guarantee the purchaser must send the instrument in its original packaging (carriage prepaid) and a description of the fault to Transmille at the address shown below. The instrument will be repaired at the factory and returned to the purchaser, carriage prepaid.

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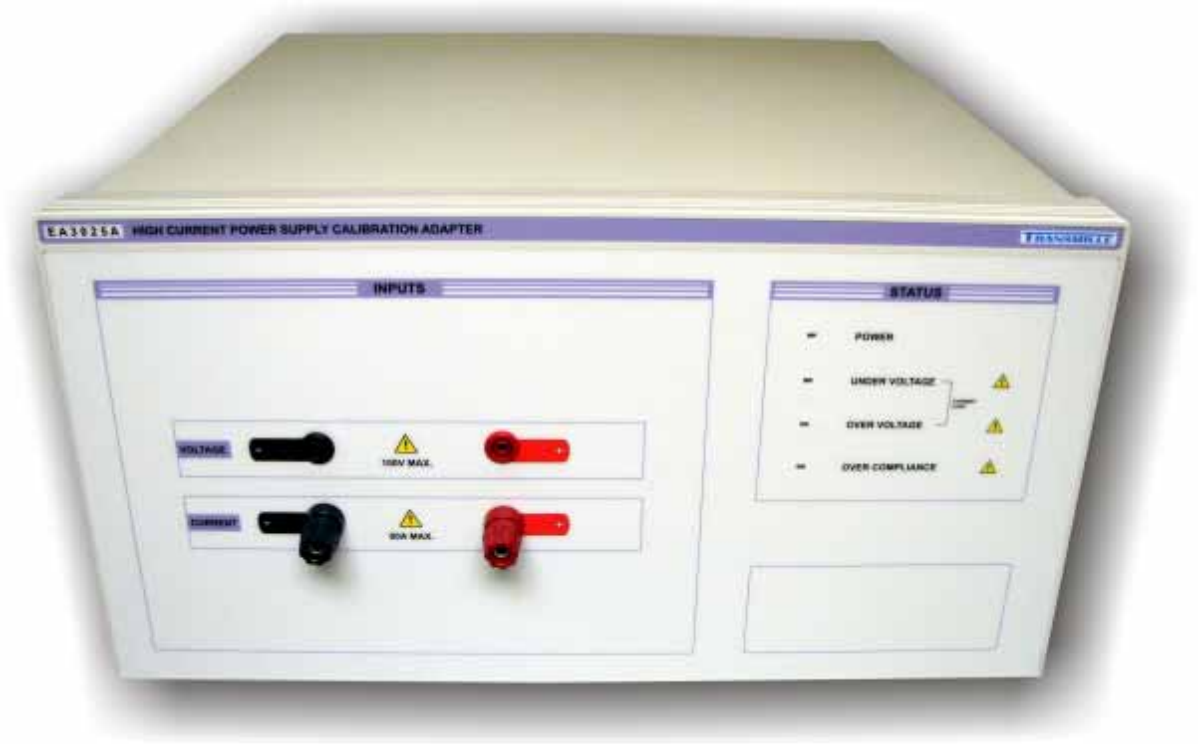
EA3025A HIGH CURRENT PSU ADAPTER



The EA3025A High Current PSU Adapter provides an easy to use solution for the calibration of high current power supplies. The EA3025A overcomes many of the problems associated with measuring higher output currents required.

Traditional techniques of using high current low value load resistors and current shunts can result in unstable/inaccurate readings even with small voltage fluctuations from the power supply or variations in connection and lead resistance. The manual nature of this method is both time consuming and prone to accidental damage of the load resistor and measurement equipment.

MAIN FEATURES

- **Measure Output Voltage to 60V**
- **Active Current Load to 60A**
- **Measures Output Resistance**
- **Applications Include Battery & UPS Testing**
- **Connects to Adapter Interface on 3000 Series Calibrator**
- **Used with Virtual Front Panel or ProCal Software**

DESIGN NOTES



- **Provides an accurate, stable electronic load regardless of the power supply output voltage and lead / connection resistances.**
- **Removes the need for high power load resistors of appropriate values.**
- **Allows automation for more efficient calibration**

FEATURES

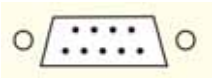
Terminal Post Connections	
EA3025A Terminal	**Function**
VOLTAGE HI Type : 4mm Safety Socket	Positive voltage input from UUT
VOLTAGE LO Type : 4mm Safety Socket	Negative voltage input from UUT
CURRENT HI Type : 4mm 60A Binding Post	Positive sense input from UUT
CURRENT LO Type : 4mm 60A Binding Post	Negative sense input from UUT

Front Panel Indicators		
Type	**Indication**	**Description**
Power	Green LED	Power on indication
Under Voltage	Red LED	Insufficient drive voltage detected
Over Voltage	Red LED	Excessive drive voltage detected **Typically 5V should be set on Power Supply UUT when using the electronic current load function.**
Over Compliance	Red LED	Internal shunt temperature too high



Label Reference	Information
Model Number	Model number reference for product
Serial Number	Unique serial number for product

Rear Panel Connections



Connection to the 3000 Series adapter interface is provided
via a 9-Pin D-Type



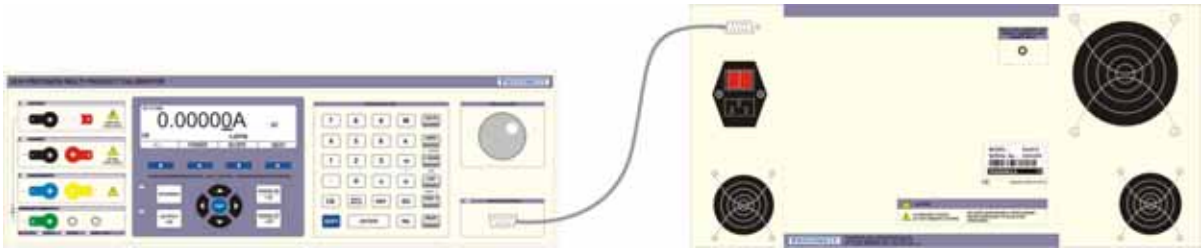
IEC line input and illuminated power switch

Operating Notes

This section details operational and environmental considerations for the EA3025A High Current PSU Adapter. Follow these instructions when operating or storing the EA3025A High Current PSU Adapter

Connection Recommendations

To connect the EA3025A High Current PSU Adapter to the 3000 Series multi product calibrator, use the supplied adapter interface cable (9-Pin Male to 9-Pin female straight through lead) :



To use the EA3025A High Current PSU Adapter, connect the positive and negative outputs to the unit under test as shown below :

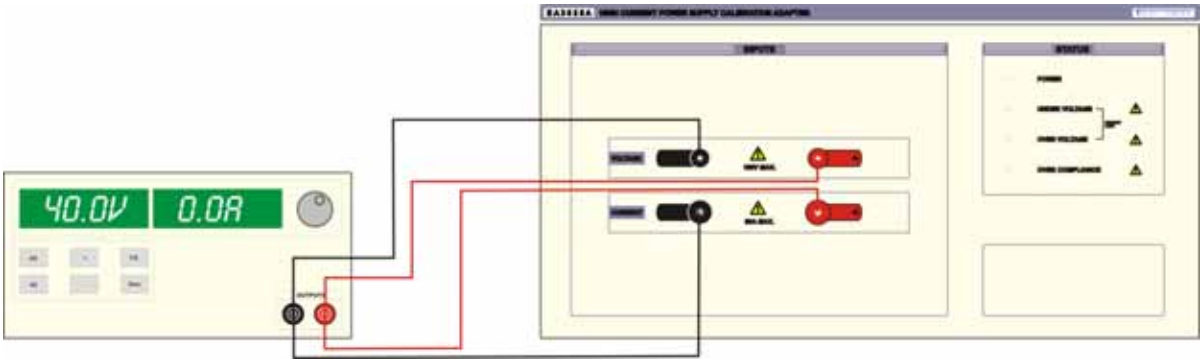


Fig. 1 : 2 Terminal Power Supply Connection Example

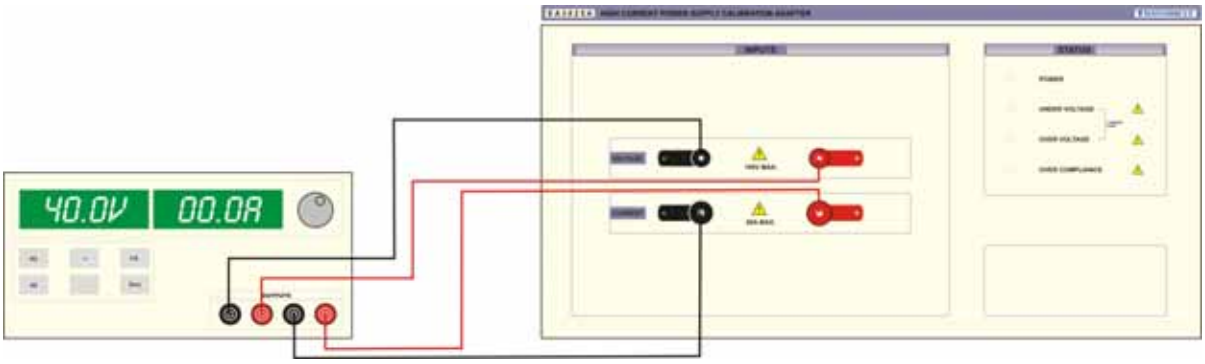


Fig. 2 : 4 Terminal Power Supply Connection Example

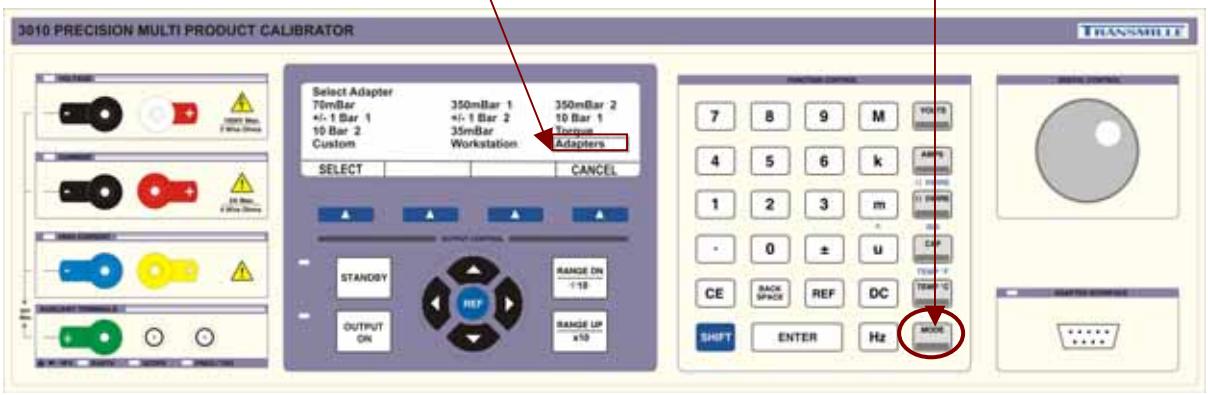
Using the EA3025A from the 3000A Front Panel*

The 3000A Series calibrators provide front panel control of the EA3025 Power Supply Calibration adapter. This can be accessed using the mode function button followed by on-screen menus as follows :

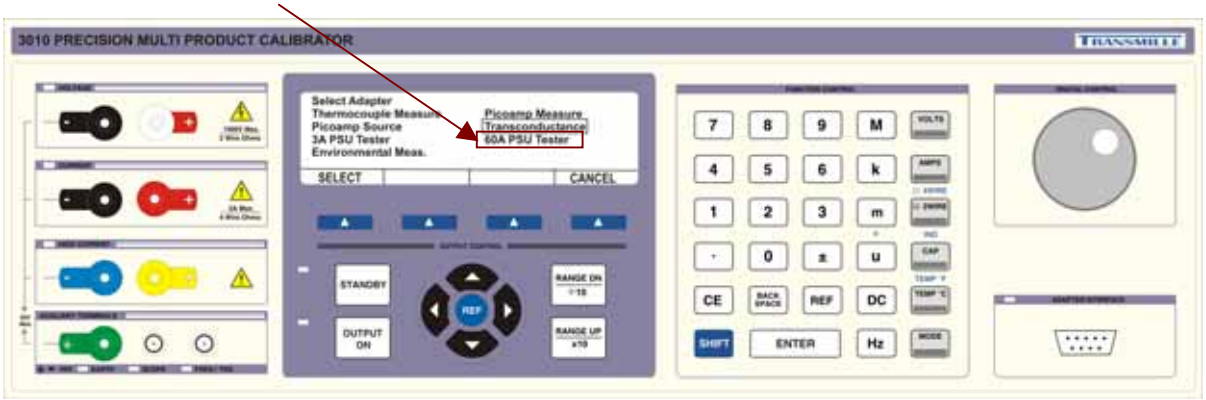
Selecting the 60A PSU Tester mode :

1. Press the MODE button to select the required adapter

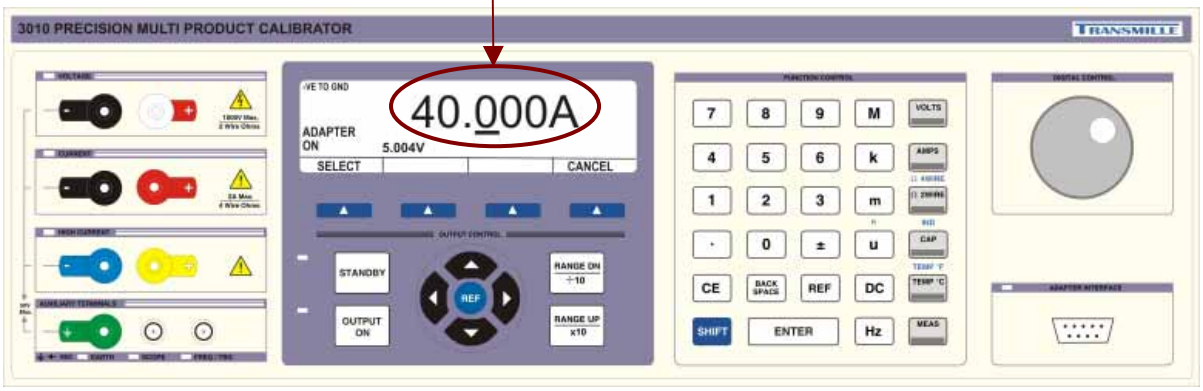
2. Use the cursor keys to select the Adapters menu item



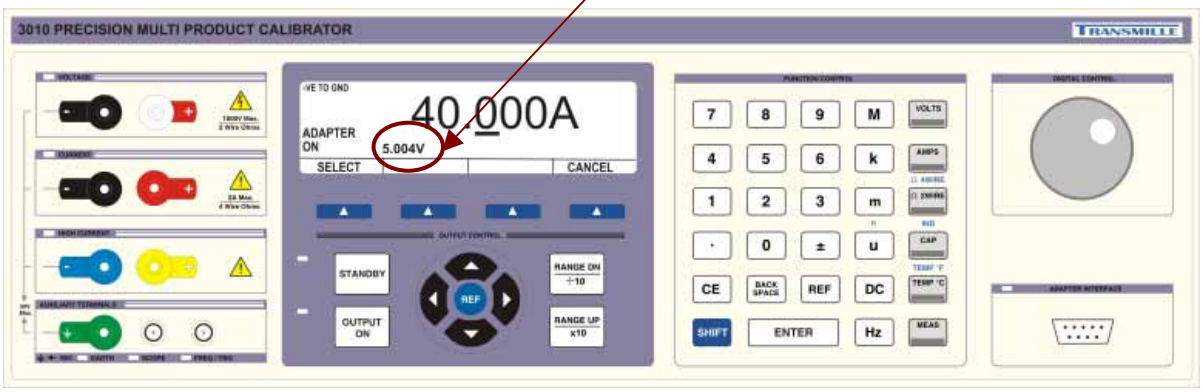
3. Select the 60A PSU Tester menu item



4. Enter current required and press OUTPUT ON to simulate the current load on the 60A PSU Adapter terminals.



5. Read the voltage measured by the EA3025A 60A PSU Adapter on the 3000A display, under the current load setting :.



* Note : Front panel control from 3000A series only (Models 3010A, 3041A & 3050A)

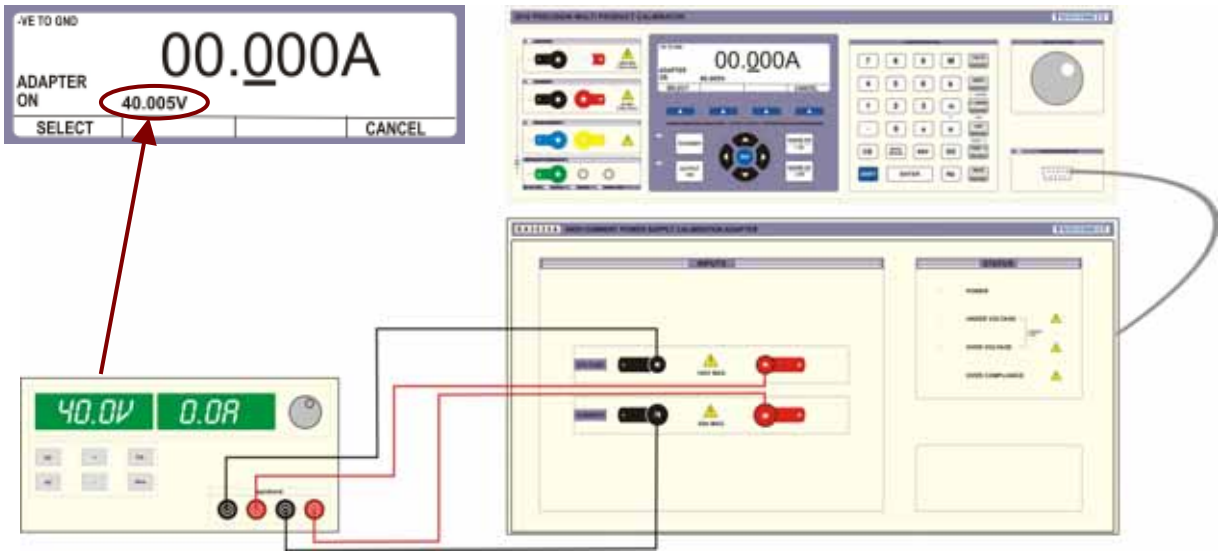
Typical Setup

- **3000A Series Calibrator**
- **EA3025A 60A Power Supply Calibration Adapter**
- **UUT (Unit Under Test) Power Supply**

Voltage Measurement

To measure voltage, simply set power supply UUT to the required voltage setting and read from 3000A Series front panel.

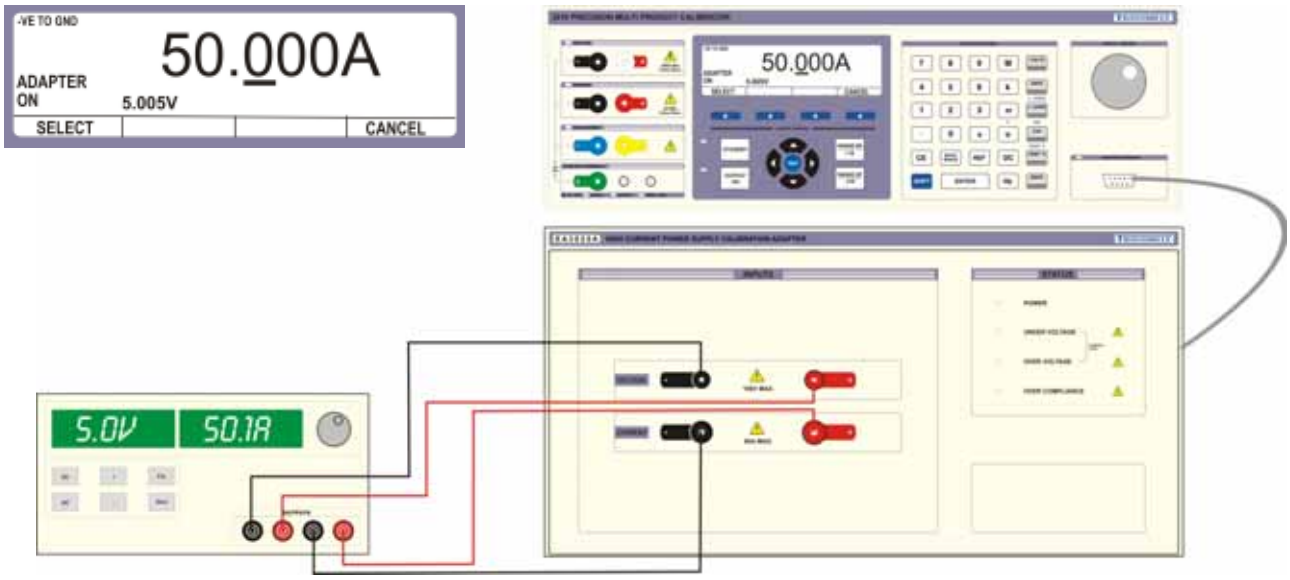
Note : Set current load to ZERO when measuring voltage or the EA3025A will indicate OVER VOLTAGE if a high current is detected.



Current Measurement

To measure current, simply set the 3000A to the required current load setting and read the current load from Power Suppy UUT display.

Note : The Power Supply UUT should be set to 5V in order minimise the power dissipated in the EA3025 active load.



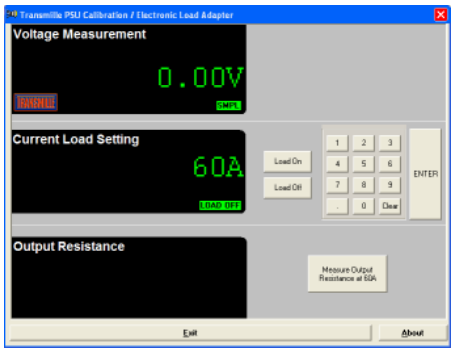
Virtual Front Panel Software

Installing the Software

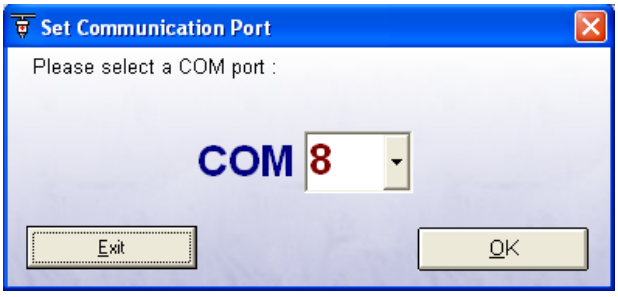
Insert the CD supplied with the EA3025A HC PSU Adapter – this should auto run. If it does not auto run, click START -> Run then run x:\Setup.exe where x is the drive letter of your CD drive.

Once installation is complete choose START -> ALL PROGRAMS -> EA3025A HC PSU Adapter to run the virtual front panel





Selecting a COM Port



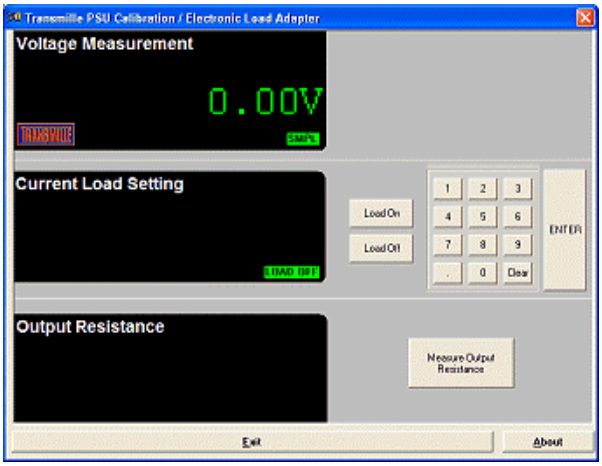
On starting the virtual front panel for the first time, a COM port selection screen will be displayed. Click on the COM port which is connected to your 3000 Series calibrator to continue.

A different COM port can be selected at any time using the Change COM button.

If you are using a laptop to connect to the calibrator, the COM port will usually be COM 1. A desktop computer will usually be COM 2

Operation of the Virtual Front Panel

Once the correct COM port is selected, the calibrator will be detected, and the main screen displayed :



The main screen comprises of three sections :

- Voltage measurement (from power supply)
- Current Load setting
- Output Resistance

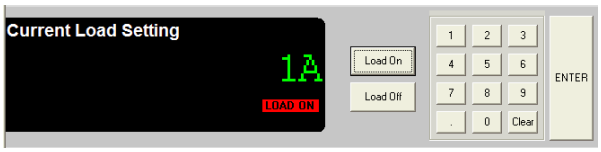
Functions : Measuring A Voltage



Connect the power supply adapter to the voltage and current terminals.

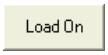
Set an output voltage from the power supply and this will be displayed in the virtual front panel voltage display section. A SMPL indicator will flash periodically to indicate a measurement sample is being made.

Functions : Setting A Current Load



Use the on screen keyboard to set the required current load :



Press the ENTER button to preset the current load, then press 

to apply the setting– the applied load will be displayed on the power supply current meter – the VFP will display **LOAD ON**

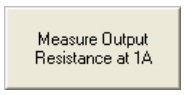
Use the 

button to turn off the current load – the VFP will display **LOAD OFF**

Functions : Output Resistance Measurement



The output resistance measurement function uses the electronic current load to measure the voltage drop on-load and off-load. Using a calculation the output resistance can then be displayed.



Press the output resistance measurement button - the virtual front panel will display ‘Calculating…’ while the load is turned on, then off in a controlled sequence to determine the voltage drop and calculating the output resistance.

If no voltage drop is detected a message will be displayed to indicate the resistance could not be determined.

SPECIFICATIONS

GENERAL SPECIFICATIONS		
Output Connections	2x Safety Sockets (Voltage) 2x 60A Binding Posts (Current)	
Indicators	Power Under Voltage Over Voltage Over Compliance (Temperature)	(Green) (Red) (Red) (Red)
Mains Supply	110V/240V @ 50Hz/60Hz	
Power Consumption	400W	
Cooling	Internal fan	
Control Interface	9 Pin 'D' type connector for use with 3000 Series adapter interface	
Dimensions	22cm x 43cm x 46cm (5U Height)	
Weight	25kg	

PERFORMANCE SPECIFICATIONS	
Voltage Measurement	0 to 60V
Resolution	10mV
Best 1 Year Accuracy	±0.02% of Setting +30mV
Current Load Range	0 to 60A
Best 1 Year Accuracy	±0.05% of Setting +30mA
Notes	Virtual Front Panel (supplied) or ProCal control

CARE & MAINTENANCE

The only maintenance instructions for the EA3025A High Current PSU Adapter is periodic cleaning. See below for details on the cleaning procedure and precautions for handling.

CLEANING THE EA3025A

To keep the external enclosure of the EA3025A in good condition, clean the outer case with a soft cloth. Do not use any liquids in cleaning the enclosure – removal of surface dust is all that is recommended.



CAUTION

Do not use cleaning fluids or solvents for cleaning as these may damage the enclosure and affect the plastic materials used in the High Current PSU Adapter.

HANDLING PRECAUTIONS

The EA3025A is designed for mechanical stability, but should not be subjected to excessive shock or be dropped. Transportation is recommended using the original packaging with avoidance of extreme changes of temperature.

SERVICING INFORMATION

The EA3025A is provided certified from the factory, and uses high precision non-adjustable shunts and are not user repairable. If the instrument is damaged it should be returned to the factory for repair and recalibration.