OMNI-1-18i / OMNI-3-18i
OMNI-3-37i
For IEC1000-3-3 (Flicker) Testing
Reference Impedance Network

- **AC Source Line Impedance Network**
  Works in combination with i Series and iX Series AC Source models
- **Compliant Reference Impedance**
  Meets IEC 1000-3-3 Flicker test specification requirements
- **Single and Three Phase Models**
  Supports single and three phase IEC compliance test setups
- **Bypass Mode**
  Low impedance path mode to disconnect reference impedance
- **18.5 or 37.0 Amps per Phase**
  Capable of supporting all products that need to be tested for compliance
- **Remote Control Interface**
  Control of Bypass mode through power source controller for automated test operation

Flicker Tests

Existing IEC regulations require flicker testing for a large class of electrical and electronic equipment. Flicker occurs when the current drawn by an electrical device causes a voltage drop on the line due to the line impedance. Flicker measurements require a controlled environment. EN 61000-3-3 / IEC 1000-3-3 deals with flicker measurement requirements. This standard describes the required test setup, which includes a precision AC source having a specific impedance. By measuring the voltage drop across the standard impedance caused by the change in current drawn by the EUT (Equipment Under Test), the amount of flicker caused by the load can be determined. The characteristics of the standard impedance must be precisely controlled at the test frequency of 50 Hz.

OMNI option

The OMNI-1-18i, OMNI-3-18i and OMNI-3-37i were specifically designed to meet the IEC 1000-3-3 reference impedance requirements when used in conjunction with an i Series or iX Series AC power source. The OMNI-1-18i and OMNI-3-18i are capable of handling the maximum 16 A per phase current required under the IEC standard. The OMNI-3-37i supports 32 A per phase.

Bypass Mode

Bypass mode of operation causes the reference impedance in the EUT power paths to be shunted to create virtually zero impedance. This electrically removes the reference impedance between the source and the EUT. In this mode, testing for other applications such as IEC 1000-3-2 (Harmonics) that don't require the reference impedance is possible without physically having to disconnect it.

Engage Mode

The Engage mode activates the reference impedance path. This mode should be used for IEC 1000-3-3 (Flicker) test applications. The default mode of operation for the OMNI is the Bypass mode so it is important to select the correct mode of operation when performing IEC 1000-3-3 tests.

Manual Control

When used with a power system that lacks direct control capability, the engage or bypass mode can be selected from the front panel. LED's clearly indicate the status of the OMNI. At power up, the OMNI defaults to the bypass mode.

Remote Control

When used with the i Series or iX Series of programmable AC power sources, the **engage** or **bypass** mode of operation are controlled from the AC Source front panel, or via the Power Source's RS232 or IEEE 488 interface. The OMNI front panel is disabled in this case; however, the LED's still indicate the status of the OMNI.

Functional Design

The OMNI-1-18i and OMNI-3-18i are housed in a slim line 3.5" high cabinet that matches the style of the i Series and iX Series AC power source. The OMNI-3-37i is contained in a 5.25" high cabinet. Either cabinet can be rack mounted using the included rack mount handles.

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Rack Mounting

For rack mount applications - especially three phase systems - the optional rack mount slides (-RMS) are recommended. All units provide carrying handles on the front of the unit with integrated rack ears.

Ordering Information

Models:

OMNI-1-18i
Reference Impedance network for 3001i/iX[1] or 5001i/iX[1] single phase AC source.

OMNI-3-18i
Reference Impedance network for 15003i/iX[1] three phase AC source.

OMNI-3-37i
Reference Impedance network for 30003i/iX[2] three phase AC source.

Note 1: Models 3001iX, 5001iX and 15003iX provide programmable impedance (dynamic impedance) which may be used in lieu of the OMNI lumped impedance. California Instruments offers the OMNI option for those users insisting on the use of a lumped reference impedance.

Note 2: Model 30003iX does not offer programmable impedance. The OMNI-3-37i is required to support IEC Flicker tests.

Options

-RMS Rack mount Slides. The use of rack mount slides or a rack shelf is recommended when installing the OMNI in a 19" rack.

Line Cord Options:

-PC1 Continental Europe
-PC3 United Kingdom
* One North American right angle Line cord is included. Optional line cords are straight which adds about 1 inch of depth.

Supplied with:

- North American Line Power Cord
- Rack mount handles
- Instruction Manual

Specifications

Input				
	Line Voltage	115 Vac±10% / 230 Vac±10%		
	Line Current (typ.)	200 mA @ 115 Vac / 60 Hz 110 mA @ 230 Vac / 50 Hz		
	Line Frequency	47-63 Hz		
	Fuse Rating	0.25 A slow acting @ 115 Vac 0.125 A slow acting @ 230 Vac		
Output		**OMNI-1-18i**	**OMNI-3-18i**	**OMNI-3-37i**
	Phases	1	3	3
	Engage/Flicker Mode:			
	Max. Current	18.5 A	18.5 A / ø	37.0 A / ø
	Useable range	2.0 - 18.5 A	2.0-18.5 A / ø	2.0 - 37.0 A / ø
	Bypass Mode:			
	Max. Current	37.0 A	37.0 A / ø	74.0 A / ø
	Impedance @ 50 Hz Engage/Flicker Mode:			
	Phase	0.24 + j0.15 Ω	0.24 + j0.15 Ω	0.24 + j0.15 Ω
	Neutral	0.16 + j0.10 Ω	0.16 + j0.10 Ω	0.16 + j0.10 Ω
	Accuracy	< 5 %	< 5 %	< 5 %
Mechanical				
	Dimensions (H x W x D)	3.5" x 19" x 22" 89 x 480 x 560 mm		5.25" x 19" x 22" 133x480x560 mm
	Weight	31 lbs 14 kg	37 lbs 17 kg	62 lbs 28 kg
Connectors				
	Input AC	IEC 320		
	Load Input and Output	Compression terminals		
Controls and Indicators				
	Power On/Off toggle switch			
	Flicker On/Off push button			
	Power Led			
	Bypass mode Led			
	Flicker mode Led			

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 Specifications subject to change without notice Printed in the USA. OMNIDS 10/98

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