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Program AC Power Worldwide
Model 801RP / 1251RP

- **Programmable Power, Low Cost**
  Cost effective solution for wide range of AC power tests
- **800 VA or 1250 VA Output Power**
  Capable of handling most single phase applications
- **Front and Rear Outputs**
  Connect load to front panel outlets or rear panel terminal block for maximum convenience
- **16 Hz to 500 Hz Frequency Range**
  Utility and Avionics applications
- **High Peak Current Capability**
  Drives a wide variety of non-linear loads
- **Remote Control Option**
  IEEE-488 and RS232C Interface for automated test applications



CE

Compact AC Power

With European and US outlet sockets to connect the load, the 801RP and 1251RP programmable AC power sources are ideal for a wide variety of applications.

Universal, Power Factor Corrected (PFC) input allows these products to be used anywhere in the world to provide a convenient source of variable utility power for the testing and evaluation of domestic and commercial equipment. All common line voltage and frequency combinations are covered.

In addition, the frequency range covers 500 Hz, making these products ideal for commercial and defense avionics applications.

A built in current measurement function eliminates the need for an external current shunt or transformer. Load current of the UUT (Unit Under Test) can be read directly on the large LCD display to 0.1 A. For additional protection, a current limit function can be set from zero to the maximum current rating.

Easy To Use Controls

Front panel digital rotary encoders are used to set voltage and frequency. These controls have an analog feel, with the precision and reliability of digital circuits. Settings are read directly on the large high contrast LCD displays.

Dual output voltage ranges of 135 Vrms L-N and 270 Vrms L-N, provide maximum current at the required voltage.

The output frequency can be varied from 16 Hz up to 500 Hz to cover both avionics and utility power applications.

IEC 1000-3-2 Test Applications

The low total harmonic distortion of the output makes the 801RP and 1251RP suitable AC sources for IEC 1000-3-2 Current Harmonics pre compliance testing. Loads requiring up to 4.6 Arms at 230 Vrms with peak currents up to 12 A can be tested with the 1251RP while the 801RP can supply up to 3.0 Arms. This covers many loads that fall under the IEC standard.

Quality Control

For product quality test applications, the 801RP and 1251RP can be used to simulate line conditions found anywhere in the world. This ensures products destined for export will operate as designed.

Avionics Applications

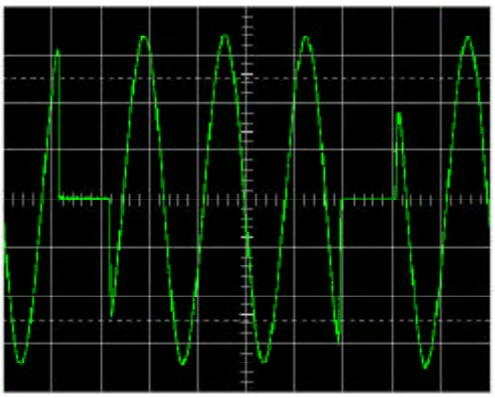
As an affordable and reliable source of 400 Hz AC power, both units are well suited for commercial and defense avionics applications. Both unit can easily be integrated into avionics ATE systems.

Functional Design

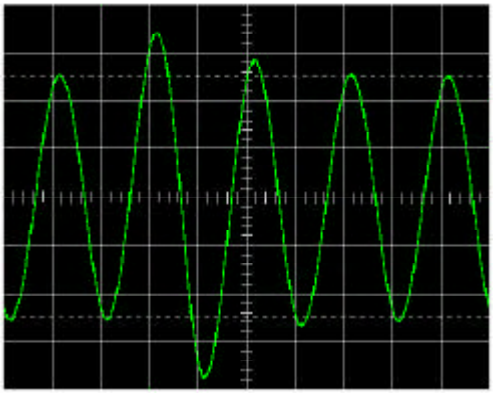
The small form factor and low weight of these units make them convenient to use in a variety of locations. Removable rubber feet protect the work surface if the unit is used in a bench top mode. The 3.5 inch height saves valuable rack space when compared to conventional AC power sources at this power level.

California Instruments

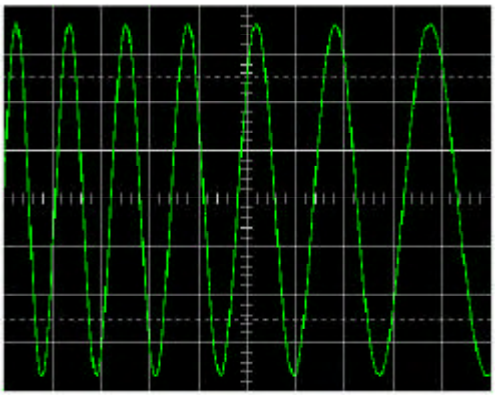
801RP / 1251RP - Easy Transient Programming



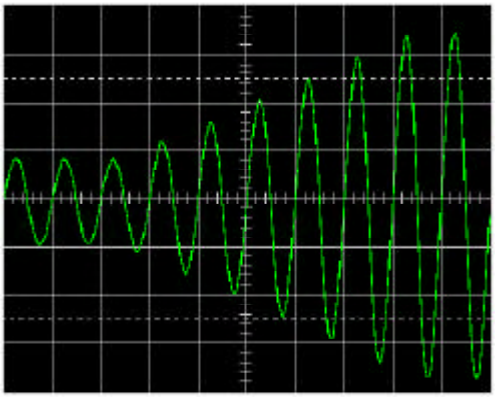
Drop transient causes output voltage to drop to zero for a user specified period.



Voltage Surge transient causes output voltage to surge



Frequency Sweep transient at a user specified rate.



Voltage Sweep transient causes output voltage to change at a programmed rate.

Extensive Transient Control[1]

With the addition of the remote control interface option, 801RP and 1251RP units are capable of producing transients with a high degree of user programmability. Setting up transient programs is facilitated by a Windows Graphical User Interface program that allows amplitude, frequency and event duration to be programmed from a PC. Time resolution is 1 ms (0.001 sec) with a minimum time interval ranging from 10 to 40 ms, depending on the transient type. Transient programming allows the effects of common line disturbances such as voltage surges, sags, drop-outs and frequency fluctuations on the unit under test to be evaluated.

Remote or Local Operation

For automated test equipment (ATE) applications, the RP Series units can be outfitted with both IEEE-488 and RS232C using the -IF option. A front panel lock out mode is supported on both models if operator interaction with the AC source is not required or desired.

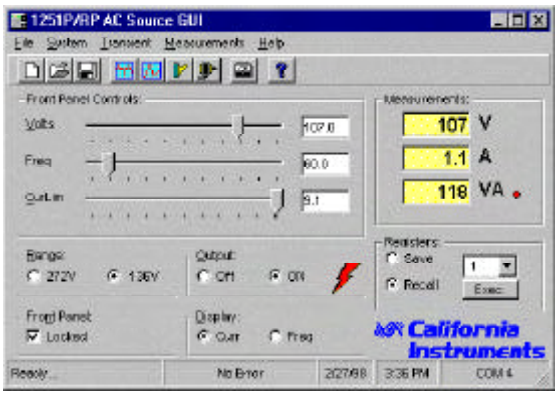
SCPI Protocol Programming Commands

All functions of the 801RP and 1251RP are completely programmable over the IEEE-488 or RS232C bus. For example, the following tasks can be performed over the bus:

- Set voltage to any level
- Change frequency
- Generate 10 ms or longer voltage dropouts
- Measure rms current, voltage and apparent power
- Recall eight complete instrument setups from non-volatile memory with a single SCPI command
- Reset the instrument
- Adjust current limit value
- Lock the front panel to prevent operator interference
- Switch between high and low voltage range
- Turn output on and off

Application Software

Windows 98™ or Windows 2000™ application software is included with the remote control interface option. This easy to use graphical interface program provides complete control over all instrument functions using either the RS232C or IEEE-488 interface. With enhanced capabilities such as data logging to file and Dynamic Data Exchange to other Windows programs, many applications can be addressed without the need for writing custom code.



Free Windows™ Graphical User Interface software included with interface option.

[1] Note: Transient control does not apply to output phase angle

Specifications

Parameter		801RP	1251RP	Unit
Controller				
Type		Programmable		
Controls		Digital Encoders		
Readout	Voltage	4 digit LCD		
	Freq. / Current	4 digit LCD		
Non Volatile Setups	(with -IF option)	8		
Output				
AC Power		800	1250	VA
Voltage				
High range / Low Range		0 - 270 / 0 - 135		V (L-N)
Accuracy	@ 50/60 Hz	± 1		% FS
	@ 400 Hz	± 2		% FS
Resolution		0.1		V
Line & Load Regulation	High V range	± 0.5		% FS
	Low V range	± 1		% FS
Line Regulation	10 % Line change	± 0.1		% FS
T.H.D.	@ 50/60 Hz	0.5 typical		%
Output Noise		< 0.1 typical		V
Frequency		(specifications valid from 45 Hz to 500 Hz)		
Range		16 - 500		Hz
Accuracy		± 0.02		%
Resolution	below 100 Hz	0.1		Hz
	above 100 Hz	1		Hz
Current				
Steady State Current	High V range	3.0	4.6	A rms
	Low V range	6.0	9.2	A rms
Peak Current	High V range	13.8	13.8	A peak
(shorted output)	Low V range	27.6	27.6	A peak
Protection				
Current limit	Mode	Programmable trip level		Output trips off
(Output shut off)	Resolution	0.1		A rms
Over Temperature		Output shut off		
Over Voltage		Output shut off		
Input				
Line Voltage[1]	2 wire + GND	100 -240		V rms
	Maximum operating range	85 - 265		V rms
Line Current (fused)		< 15		A rms
Line Frequency		47 - 63		Hz
Holdup Time		20		m s
Power Factor		> 0.95 typical		
Isolation	Input to Chassis	1350		V
	Input to Output	2200		V
Measurements				
Current (RMS steady state)	Range	0.0 - 10.0		A rms
	Accuracy	± 0.2		A rms
	Resolution	0.1		A
Voltage	Range	0 - 278		V
	Resolution	1 (below 250 V)		V
Remote Control Option				
Interface types	option -IF	RS232C IEEE-488		
IEEE-488 Address		0 - 31		
IEEE Functions		SH1, AH1, T8, L3, RL2, SRQ0, PP0		
RS232C settings		9600,8,n,1		
Command Language		SCPI		
Physical				
Regulatory		CE		
Dimensions	HxWxD	3.5 x 16.8 x 22		inches
	HxWxD	89 x 427 x 560		m m
Weight (net)		34 / 15.4		lbs / kg
Vibration and Shock		Designed to meet NSTA-1A		
Temperature	Operating	0 to 40 / - 40 to + 85		° C

[1] 120 Vrms minimum line input required for full 1250 VA output on model 1251RP.

Note: Specifications are warranted for an ambient temperature of 23° + 5° C and apply after a 30 minute warmup period.

Remote Control

The RP Series can be ordered with a combined RS232C and IEEE-488 remote control interface option. A Windows Graphical User Interface (GUI) program is included with either option for PC control applications.

Ordering Information

Models:

801RP	800 VA rack-mount AC source
1251RP	1250 VA rack-mount AC Source

Options:

-FN	Floating Neutral output.
-IF	IEEE-488 and RS232C Interface
-ISS	International Socket Strip
-ISR	Rack mounted ISS
-L22	Locking knobs
-RI	Remote Inhibit Input (Req. -IF)
-RMS	Rack Slides (P/N 210367)

Line Cord Options:

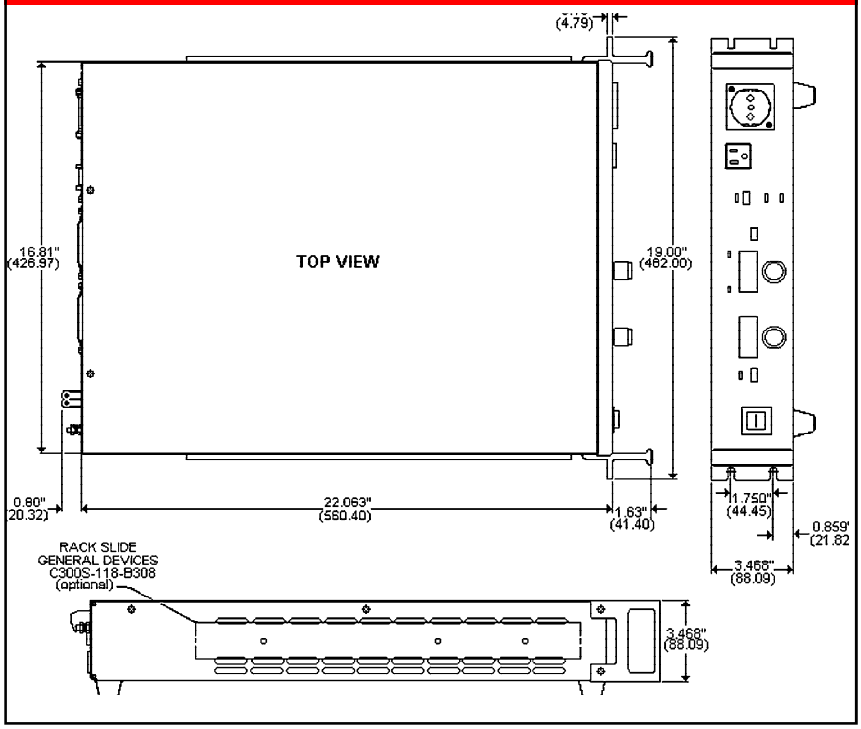
Country	Part No.
Continental Europe	PC1
Australia / New Zealand	PC2
UK / Ireland etc.	PC3
Denmark	PC4
India	PC5
Israel	PC6
Italy	PC7
Switzerland	PC9
North America*	PC10

** One North American Line cord is included. Optional line cords are straight, adding about 1 inch of depth to unit.*

Supplied with:

- North American Line Power Cord
- USA and European line output mating connector
- Instruction Manual
- Windows™ Graphical User Interface and RS232C cable (with -IF option)

***801RP / 1251RP** Dimension drawing*



Higher Power Models



A 2000 VA version of the RP Series is available in both single and three phase output configurations. Refer to the 2001RP and 2003RP catalog pages for details.

Portable AC Sources



For mobile or bench top applications, 1000 VA portable AC power sources are available as well. The 1001P offers similar capabilities as the 801RP at an increased power level. For applications that only require fixed voltage and frequency settings, the 1001WP frequency converter provides push button selection of nominal 50 or 60 Hz and 100V, 115V, 220V, 230V and 240 V settings. Refer to P and WP Series catalog pages for details.

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