

8500 Series

Programmable AC Power Source



The APT 8500 Series is the most power dense and functionality rich source in APT history, giving you improved capability, functionality, and a reduced footprint in one series. These new models provide an output voltage of up to 310 VAC and an output frequency ranging from 5 Hz - 1,200 Hz, making it the obvious solution for all kinds of applications. Configure this power source as a simple bench top AC Power Source in Manual mode or, as an upgraded option, Programmable mode, to be used with an interface to a PC. The 8500 Series includes the following models: 8505, 8512, 8520, 8540

Features

- 14 pre-configured waveforms allow you to simulate nearly any abnormal condition on your DUT by simply selecting the waveform you would like to output.
- With expanded output voltage to 310VAC and output frequency from 5Hz to 1200Hz, the 8500 provides a single, simple solution to meet a wide variety of testing applications.
- Programmable mode option allows you to easily simulate voltage surges, voltage drops, voltage pulses, voltage sweeps, DC bias, and frequency sweeps to help make meeting the specific needs of your testing application easier than it has ever been.
- High power density with a reduced overall footprint offers you the flexibility you need to use your 8500 Series power source in either a bench top or rack mount application
- Easily upgrade and keep your command set from your 6000, 7000, or 300XAC Series with the legacy program mode.



Standard

- USB/RS-232 Interface
- Ethernet Interface

Options

- GPIB Interface



Applicable Industries



Aerospace



Appliance



Laboratory



Networking



System Integrator



Lighting



Medical

APT Benefits



FEATURES	MANUAL MODE (STANDARD)	PROGRAMMABLE MODE (OPTION)
Manual Operation	•	•
PC Interface (USB/LAN standard, optional GPIB)		•
PowerTRAC Compatibility		•
Voltage, Frequency, Transient, and DC Bias Sweeps		•

Specifications – 8500

INPUT		8505	8512	8520	8540	
Phase		1Ø2W				
Voltage		100 - 240 V ± 10%			200 - 240 V ± 10%	
Max. Current		8A	18A	30A	30A	
Power Factor		≥0.93 at Full load		≥0.97 at Full load		
AC OUTPUT						
Power Rating	1Ø2W	500VA	1250VA	2000VA	4000VA	
Max. Current (r.m.s)	1Ø2W	0 - 155V	5A @ 100V	12.5A @ 100V	20A @ 100V	40A @ 100V
		0 - 310V	2.5A @ 200V	6.25A @ 200V	10A @ 200V	20A @ 200V
Inrush Current (peak)	1Ø2W	0 - 155V	20A	50A	80A	160A
		0 - 310V	10A	25A	40A	80A
Frequency		5.0 - 1200 Hz				
Phase		1Ø2W				
THD (Total Harmonic Distortion)		≤0.3% @ 50/60Hz (Full Resistive Load) ≤1.1% @ 5 - 1000Hz (Full Resistive Load) ≤1.2% @ 1001-1200Hz (Full Resistive Load)				
Crest Factor		≥3				
Line Regulation		±0.1V				
Load Regulation (Hardware)		± (1% of output +0.5V) @ Resistive Load, < 400µS response time				
Load Regulation (Software)		±0.2V, < 1S response time				
DC Offset		≤±30mV (typical)				
DC OUTPUT						
Power Rating		300W	750W	1200W	2400W	
Max. Current	0 - 210V	3.0A	7.5A	12.0A	24.0A	
	0 - 420V	1.5A	3.75A	12.0A	24.0A	
Ripple & Noise (rms)	Range	L	< 700mV		< 800mV	
		H	< 700mV		< 800mV	
Ripple & Noise (p-p)		< 6.0Vp-p			< 7.0Vp-p	
SETTINGS		8505	8512	8520	8540	
Voltage (AC)	Range	0 - 310V, 155/310V Auto Range				
	Resolution	0.1V				
	Accuracy	±(0.2% of setting + 3 counts)			±(0.2% of setting + 6counts)	
Voltage (DC)	Range	0 - 420V, 210/420V Auto Range				
	Resolution	0.1V				
	Accuracy	±(0.2% of setting + 3counts)			±(0.2% of setting + 6counts)	
Frequency	Range	DC, 5 - 1200Hz Full Range Adjust				
	Resolution	0.1Hz at 0.0 - 999.9Hz, 1Hz at 1000 - 1200Hz				
	Accuracy	±0.03% of setting (≥15Hz) ±0.3% of setting (<15Hz)				
Start Angle	Range	0~359°				
	Resolution	1°				

Specifications – 8500

SETTINGS		8505	8512	8520	8540	
Current Hi Limit (OC Fold=OFF) OC Fold Back (OC Fold = ON)	0 - 155V	0.05 - 5.00A	0.05 - 12.50A	0.05 - 20.00A	0.10 - 40.00A	
	0 - 310V	0.05 - 2.50A	0.05 - 6.25A	0.05 - 10.00A	0.10 - 20.00A	
	Resolution	0.01 A				
	Accuracy	± (2.0% of setting + 4 counts)				
OC Fold Back Response Time		< 1.4S				
Time [†]	Range	1.0 - 999.9H 1.0 - 999.9M 1.0 - 999.9s 0.1 - 999.9ms				
	Resolution	0.1h 0.1Min 0.1s 0.1ms				
	Accuracy	± (0.1% + 0.1 Hour) ± (0.1% + 0.1 Minute) ± (0.1% + 0.1 sec) ± (0.1% + 0.1 ms)				
Time Unit [†]		Hour, Minute, Second, ms				
Ramp Up [†]	Range	0.1 - 999.9s, 0 = OFF				
	Resolution	0.1s				
	Accuracy	± (0.1% + 1 Cycle) at Output frequency ≤ 10Hz ± (0.1% + 0.1 sec) at Output frequency > 10Hz				
MEASUREMENT						
Frequency	Range	0.0~1200Hz				
	Resolution	0.1Hz / 1Hz				
	Accuracy	±0.1Hz @ 5 - 999.9Hz. ±1Hz @ 1000 - 1200Hz				
Voltage (AC)	Range	0 - 310V, 155/310V Auto Range				
	Resolution	0.1V				
	Accuracy	±(0.2% of reading + 3 counts) at voltage > 5V			±(0.2% of reading + 6 counts) at voltage > 5V	
Voltage (DC)	Range	0 - 420V, 210/420V Auto Range				
	Resolution	0.1V				
	Accuracy	±(0.2% of reading + 3 counts) at voltage > 5V			±(0.2% of reading + 6 counts) at voltage > 5V	
Current (AC, DC)	Range	L	0.050 - 1.200A	0.050 - 5.000A		-
		H	1.00 - 6.25A			
	Resolution	L	0.01A			-
		H	0.01A			
	Accuracy	L	± (1% of reading + 10 counts) at CF < 3	± (1% of reading + 10 counts) at CF < 3		-
		H	± (0.5% of reading + 8 counts)			± (0.5% of reading + 12 counts)
Current (AC, DC)	Range	L	0.0 - 75.0W	0.0 - 300.0W		-
		H	60 - 625W	240 - 1563W	240 - 2500W	0 - 5000W
	Resolution	L	0.1W			-
		H	1W			
	Accuracy	L	± (1% of reading + 10 counts) at PF ≥ 0.3 and voltage > 5V	± (2% of reading + 15 counts) at PF ≥ 0.3 and voltage > 5V		-
		H	± (1% of reading + 5 counts) at PF ≥ 0.3 and voltage > 5V	± (1% of reading + 10 counts) at PF ≥ 0.3 and voltage > 5V	± (1% of reading + 10 counts) at PF ≥ 0.3 and voltage > 5V	± (1% of reading + 20 counts) at PF ≥ 0.3 and voltage > 5V
Power Factor	Range	0.000 - 1.000				
	Resolution	0.001				
	Accuracy	W/VA, Calculated and displayed to three significant digits				

[†]Available on in programmable mode option

MEASUREMENT			8505	8512	8520	8540
Power Apparent (VA) [†]	Range	L	0.0 - 75.0VA	0.0 - 300.0VA		-
		H	60 - 625VA	240 - 1563VA	240 - 2500VA	0 - 5000VA
	Resolution	L	0.1VA			
		H	1VA			
Calculated Formula		V×A, Calculated value				
Peak Current Measurement [†]	Range		0.0 - 20.0Apk	0.0 - 50.0Apk	0.0 - 80.0Apk	0.0 - 160.0Apk
	Resolution		0.1A			
	Accuracy		± (0.5% of reading + 8 counts)			
Reactive Power Measurement [†]	Range	L	0.0 - 75.0VAR	0.0 - 300.0VAR		-
		H	60 - 625VAR	240 - 1563VAR	240 - 2500VAR	0 - 5000VAR
	Resolution	L	0.01A			
		H	0.01A			
Calculated Formula		$\sqrt{(VA)^2 - (W)^2}$				
Crest Factor Measurement [†]	Range		0.00 - 10.00			
	Resolution		0.01			
	Calculated Formula		Ap / A			
Software OCP			≤110% of full rated current (102% < Io ≤110%), >5 second output shut down >110% of full rated current, <1.5 second output shut down			
Output Short Shut Down Speed			<1 second			
Software OPP			≤110% of full rated current (102% < Po ≤110%), >5 second output shut down >110% of full rated current, <1.5 second output shut down			
Software OVP			Over voltage 105% of full rated voltage			
Software VSENSE OVP	H		When measurement voltage exceeds setting voltage 10V			
	L		When measurement voltage exceeds setting voltage 5V			
Software VSENSE LVP	H		When measurement voltage is lower than setting voltage 10V			
	L		When measurement voltage is lower than setting voltage 5V			
Hardware OTP			Temperature over 108°C on power component of the PFC and DDC Temperature over 100°C on heatsink of the power amplifier			
Software RCP (Reverse Current Protection)			When reverse power over 5% of full rated power			
Hardware FAN FAIL			When fan fails and fan is blocked			
Dimensions						
Dimension by Model (mm)	W		430	430	430	430
	H		88	88	88	176
	D		500	500	500	500
Weight			15KG	15KG	15KG	28KG
Storage Environment			-40° to 75°C			
Operation Environment			0-40°C/20-85% RH			

[†]Available on in programmable mode option