

300XAC Series

Modular AC Power Sources



Your Power House
VP ELECTRONIQUE



Overview

Our 300XAC Series modular AC power sources incorporate the latest in modular technology, making them ideal for the most demanding applications. These versatile AC power sources can be configured for 1 Φ stand-alone operation or linked together for up to 16.2 kVA of AC power in 1 Φ or up to 18 kVA of AC power in 3 Φ output configurations.



**Instrument
Control
Software**

Highlights

- Advanced metering circuits monitor voltage, current, peak current, power, apparent power, reactive power, power factor, and crest factor
- External voltage sensing for accurate metering
- Transient feature simulates voltage variations, brownouts and transient voltage conditions
- Programmable starting and ending angle of the output sine wave
- Standard DC output capability
- 50 built-in memory locations with 9 test steps
- Rack mount handle kit included
- LabVIEW® Drivers available
- Free APT instrument control software available

Options

- Grounded Neutral
- Ethernet Interface
- GPIB Interface
- Linking Card
- 7 Memory Remote

APT...Power to the Customer!



The Benefits of the 300XAC Modular AC Power Sources



The APT 300XAC Modular Power Sources can link several AC power sources to give you the maximum flexibility that your operation requires

What is a modular AC power source?

We use the term modular to define the capability of the 300XAC Series of AC power sources to be interconnected in order to produce higher power outputs and different power configurations than an individual instrument. When multiple 300XAC instruments are interconnected the operator can configure the output for Parallel or Polyphase modes. Parallel mode allows the operator to increase the output current of the system by a factor of 2 or 3 depending on the number of sources that are interconnected. Polyphase mode allows the operator to increase the total power output of the system as well as change the output power configuration of the system.

The APT Link Card (Option 08)

The 300XAC Series can be used as a stand-alone instrument which provides 1 Φ output power. If the Linking Card option is installed, up to three 300XAC instruments can be interconnected for Parallel or Polyphase output.

Master/Slave Relationship

The master/slave relationship between linked 300XAC instruments synchronizes the firmware of each power source so the output and phase angle separation is regulated. It also gives the operator the capability to program parameters for all linked sources from the front panel of the master instrument.

SmartDETECT®

The SmartDETECT feature automatically determines how many power sources are linked together. After the check is completed the 300XAC Series will automatically change the programming output function based on the number of linked sources.

SmartCONFIG® Feature

The SmartCONFIG feature allows the operator to change the output of the linked sources to Parallel or Polyphase mode with the push of a button.

The Modular AC Source Advantage

Easy to change from 1 Φ to 3 Φ output
No need to have separate sources for 1 Φ to 3 Φ applications
Allows for future expansion if power requirements change
Greater mobility of the AC Power Source
The ability to generate greater current or voltage if only 1 Φ power is available
The ability to generate 3 Φ power if only 1 Φ power is available

Specifications - 300XAC Series

Doc. IS-0010

INPUT		310XAC	320XAC	340XAC	360XAC
Phase		1Φ			1Φ or 3Φ
Voltage		90 - 264 VAC		180 - 264 VAC	180 - 457 VAC
Frequency		47 - 63 Hz			
OUTPUT					
Voltage		5 - 300 V			
Max Power		1 kVA	2 kVA	4 kVA	6 kVA
Max Current 1Φ	0 - 150 V	9.2 A @ 110 V	18.4 A @ 110 V	36.8 A @ 110 V	55.2 A @ 110 V
	0 - 300 V	4.6 A @ 220 V	9.2 A @ 220 V	18.4 A @ 220 V	27.6 A @ 220 V
Phase		1Φ (Parallel/Poly-Phase Linking for 1Φ3W or 3Φ4W)			
Frequency		40.0 - 1000 Hz			
THD		<1% (Resistive Load)			
Crest Factor		Inrush CF ≥ 3 at 110 V, Continuous Current CF ≥ 3 at 110 V			
Line Regulation		± 0.1 V			
Load Regulation		±0.5 V			
DC OUTPUT VOLTAGE					
Voltage		5 - 420 V			
Max Power		1000 W	2000 W	4000 W	6000 W
Max Current 1Φ	0 - 210 V	4.8 A	9.6 A	19.2 A	28.8 A
	0 - 420 V	2.4 A	4.8 A	9.6 A	14.4 A
Ripple & Noise		< 3.0 V p-p		< 4.0 V p-p	
MEASUREMENT					
Voltage	Range	0.0 - 400.0 V			
	Accuracy	± (1% of reading + 2 counts) > 5 V		± (1% of reading + 5 counts) > 5 V	
Frequency	Range	0.0 - 1000 Hz			
	Accuracy	0.0 - 500 Hz ± 0.1 Hz, 501 - 1000 Hz ± 0.2 Hz			
Current (rms)	Range	0.005 A - 13.00 A	0.005 A - 26.00 A	0.05 A - 52.00 A	0.05 A - 78.00 A
	Accuracy	± (1% of reading + 5 counts)		± (1% of reading + 5 counts) @ 40 - 100 Hz, ± (1% of reading + 5 counts) @ 101 - 500 Hz > 0.1 A, ± (1% of reading + 5 counts) @ 501 - 1000 Hz > 0.2 A	
Current Peak	Range	0.0 A - 38.0 A	0.0 A - 76.0 A	0.0 A - 152 A	0.0 A - 228 A
	Accuracy	± (1% of reading + 5 counts)			
Power	Range	0.0 W - 1300 W	0.0 W - 2600 W	0.0 W - 5200 W	0.0 W - 7800 W
	Accuracy	L	± (2% of reading + 15 counts) at PF ≥ 0.2		± (2% of reading + 5 counts) at PF ≥ 0.2
		H	± (2% of reading + 5 counts) at PF ≥ 0.2		
Power Apparent (VA)	Range	0.0 VA - 1300 VA	0.0 VA - 2600 VA	0.0 VA - 5200 VA	0.0 VA - 7800 VA
	Accuracy	VxA, Calculated value			
Power Reactive (Q)	Range	0.0 VAR - 1300 VAR	0.0 VAR - 2600 VAR	0.0 VAR - 5200 VAR	0.0 VAR - 7800 VAR
	Accuracy	$\sqrt{(VA)^2 - (W)^2}$, Calculated value			
Power Factor	Range	0.000 - 1.000			
	Accuracy	W/VA, Calculated and displayed to three significant digits			
Crest Factor	Range	0.0 - 10.0			
	Accuracy	Apeak / Arms, Calculated and displayed to two significant digits			
OPTIONS					
Grounded Neutral	Option 2	All Models			
GPB Interface	Option 3	All Models			
7 Remote Memory	Option 4	All Models			
Ethernet Interface	Option 6	All Models			
Linking Card	Option 8	All Models			
GENERAL					
Operation Environment		0 - 40°C / 20 - 80% RH			
Dimensions W x H x D - inches/mm		16.92 x 5.26 x 20.87 in	16.92 x 5.26 x 20.87 in	16.92 x 10.51 x 19.69 in	16.92 x 15.77 x 19.69 in
		430 x 133.5 x 530 mm	430 x 133.5 x 530 mm	430 x 267 x 500 mm	430 x 400.5 x 500 mm
Net Weight Lbs. (kg)		44 lbs (20 kg)	46.3 lbs (21 kg)	110.2 lbs (50 kg)	117 lbs (53 kg)

Specifications subject to change

Linking Parallel Output 1Φ2W			310XAC	320XAC	340XAC	360XAC
Linked Units			2 - 3 Units, 1Φ2W (L1 - N)			
Voltage	Phase		5 - 300 V			
Power	# Units	2	1.8 kVA	3.6 kVA	7.2 kVA	10.8 kVA
		3	2.7 kVA	5.4 kVA	10.8 kVA	16.2 kVA
Max Current	0 - 150 V	L(2)	14.72 A @ 20 V -110 V	29.44 A @ 20 V -110 V	58.88 A @ 20V - 110 V	88.32 A @ 20 V - 110 V
		L(3)	22.08 A @ 20 V - 110 V	44.16 A @ 20 V - 110 V	88.32 A @ 20 V - 110 V	132.48 A @ 20 V - 110 V
	0 - 300 V	H(2)	7.36 A @ 20 V - 220 V	14.72 A @ 20 V - 220 V	29.44 A @ 20 V - 220 V	44.16 A @ 20 V - 220 V
		H(3)	11.04 A @ 20 V - 220 V	22.08 A @ 20 V - 220 V	44.16 A @ 20 V - 220 V	66.24 A @ 20 V - 220 V
Linking Polyphase Output 1Φ3W			310XAC	320XAC	340XAC	360XAC
Linked Units			2 Units @ 180°, 1Φ3W (L1-L2 - N)			
Voltage	Phase		10 - 600 V			
	Line		5 - 300 V			
Power	Max		2 kVA	4 kVA	8 kVA	12 kVA
	Max Current	0 - 300 V	L(1)	9.2 A @ 110 V	18.4 A @ 110 V	36.8 A @ 110 V
Phase		0 - 600 V	H(1)	4.6 A @ 220 V	9.2 A @ 220 V	18.4 A @ 220 V
Max Current	0 - 300 V	L(2)	9.2 A @ 220 V	18.4 A @ 220 V	36.8 A @ 220 V	55.2 A @ 220 V
		Line	0 - 600 V	H(2)	4.6 A @ 440 V	9.2 A @ 440 V
Linking Polyphase Output 3Φ4W			310XAC	320XAC	340XAC	360XAC
Linked Units			3 Units @ 120°, 3Φ4W (L1-L2-L3 - N)			
Voltage	Phase		5 - 300 V			
	Line		5 - 520 V			
Power	Max		3 kVA	6 kVA	12 kVA	18 kVA
	Max Current	0 - 150 V	L(1)	9.2 A @ 110 V	18.4 A @ 110 V	36.8 A @ 110 V
Phase		0 - 300 V	H(1)	4.6 A @ 220 V	9.2 A @ 220 V	18.4 A @ 220 V
Max Current	0 - 150 V	L(3)	9.2 A @ 190.5 V	18.4 A @ 190.5 V	36.8 A @ 190.5 V	55.2 A @ 190.5 V
		Line	0 - 300 V	H(3)	4.6 A @ 381 V	9.2 A @ 381 V
Max Current	0 - 260 V	L(3)	5.31 A @ 190.5 V	10.62 A @ 190.5 V	21.24 A @ 190.5 V	31.87 A @ 190.5 V
		Phase Delta	0 - 520 V	H(3)	2.65 A @ 381 V	5.31 A @ 381 V
Linking Parallel DC Output 1Φ2W			310XAC	320XAC	340XAC	360XAC
Linked Units			2 - 3 Units, 1Φ2W (L1 - N)			
Voltage Power	Line		5 - 420 V			
Power	# Units	2	1.8 kVA	3.6 kVA	7.2 kVA	10.8 kVA
		3	2.7 kVA	5.4 kVA	10.8 kVA	16.2 kVA
Max Current	0 - 210 V	L(2)	7.68 A @ 50 V - 210 V	15.36 A @ 50 V - 210 V	30.72 A @ 50 V - 210 V	46.08 A @ 50 V - 210 V
		L(3)	11.52 A @ 50 V - 210 V	23.04 A @ 50 V - 210 V	46.08 A @ 50 V - 210 V	69.12 A @ 50 V - 210 V
	0 - 420 V	H(2)	3.84 A @ 50 V - 420 V	7.68 A @ 50 V - 420 V	15.36 A @ 50 V - 420 V	23.04 A @ 50 V - 420 V
		H(3)	5.76 A @ 50 V - 420 V	11.52 A @ 50 V - 420 V	23.04 A @ 50 V - 420 V	34.56 A @ 50 V - 420 V

Specifications subject to change

Measurement (Total) Linking Parallel 1Φ2W			310XAC	320XAC	340XAC	360XAC
Voltage	Range		0.0 - 400.0 V			
	Accuracy		± (1% of reading + 2 counts) > 5 V		± (1% of reading + 5 counts) > 5 V	
Frequency	Range		0.0 - 1000.0 Hz			
	Accuracy	L	± 0.1 Hz @ 0.0 - 500 Hz			
		H	± 0.2 Hz @ 501 - 1000 Hz			
Current (rms)	Range	2	0.00 A - 26.00 A	0.00 A - 52.00 A	0.00 A - 104.0 A	0.00 A - 156.0 A
		3	0.00 A - 39.00 A	0.00 A - 78.00 A	0.00 A - 156.0 A	0.00 A - 234.0 A
	Accuracy	L	± (1.5% of reading +15 counts) x # of Linked Units @ 40.0 - 70.0 Hz & Current is > 1.0 A		± (1.5% of reading +15 counts) x Link Units @ 40.0 - 70.0 Hz and current(r.m.s.) > 2.00 A, ± (1.5% of reading +15 counts) x Link Units @ 70.1 - 1000 Hz, and current(r.m.s.) > 10.00 A	± (1.5% of reading +15 counts) x Link Units @ 40.0 - 70.0 Hz and current(r.m.s.) > 3.00 A, ± (1.5% of reading +15 counts) x Link Units @ 70.1 - 1000 Hz, and current(r.m.s.) > 15.00 A
		H	± (1.5% of reading +15 counts) x # of Linked Units @ 70.1- 1000 Hz & Current is > 5.00 A			
Power (W)	Range	2	0 W - 2600 W	0 W - 5200 W	0 W -10400 W	0 W - 15600 W
		3	0 W - 3900 W	0 W - 7800 W	0 W - 15600 W	0 W - 23400 W
	Accuracy		± (2% of reading + 10 counts) x (# of Linked Units) at PF ≥ 0.2, 40 - 500 Hz, and Current > 5.0 A ± (2% of reading + 10 counts) x (# of Linked Units) at PF ≥ 0.3, 501 - 1000 Hz, and Current > 5.0 A			
Power Apparent (VA)	Range	2	0 W - 2600 VA	0 W - 5200 VA	0 W -10400 VA	0 W - 15600 VA
		3	0 W - 3900 VA	0 W - 7800 VA	0 W - 15600 VA	0 W - 23400 VA
	Accuracy		V x A, Calculated Value			
Power Reactive (Q)	Range	2	0 W - 2600 VA	0 W - 5200 VA	0 W -10400 VA	0 W - 15600 VA
		3	0 W - 3900 VA	0 W - 7800 VA	0 W - 15600 VA	0 W - 23400 VA
	Accuracy		$\sqrt{(VA)^2 - (W)^2}$, Calculated Value			
Power Factor	Range		0 - 1.000			
	Accuracy		W / VA, Calculated and displayed to three significant digits			
Measurement (Total) Linking Polyphase 1Φ3W			310XAC	320XAC	340XAC	360XAC
Voltage	Range	2	L1 Voltage + L2 Voltage			
	Accuracy		Summation of linked sources, Calculated and displayed to one significant digit			
Frequency	Range		0.0 - 1000.0 Hz			
	Accuracy	L	± 0.1 Hz @ 0.0 - 500 Hz			
		H	± 0.2 Hz @ 501 - 1000 Hz			
Current (rms)	Range	2	(L1 Current + L2 Current)/2			
	Accuracy		± (1% of reading + 5 counts) at 40 - 70 Hz ± (1% of reading + 5 counts) at 70.1 - 500 Hz, and output current (r.m.s.) > 0.200 A ± (1% of reading + 5 counts) at 501 - 1000 Hz, and output current (r.m.s.) > 0.300 A			
Power (W)	Range	2	L1 Power + L2 Power			
	Accuracy	2	L1 Power + L2 Power, Calculated Value			
Power Apparent (VA)	Range	2	L1 VA + L2 VA			
	Accuracy	2	L1 VA + L2 VA, Calculated Value			
Power Reactive (Q)	Range	2	L1 VAR + L2 VAR			
	Accuracy	2	L1 VAR + L2 VAR, Calculated Value			
Power Factor	Range		0 - 1.000			
	Accuracy		(L1 P + L2 P) / (L1 VA + L2 VA), Calculated and displayed to three significant digits			

Specifications subject to change

Measurement (Total) Linking Polyphase 3Φ4W		310XAC	320XAC	340XAC	360XAC	
Voltage	Range	(A+B+C)/3				
	Accuracy	(A+B+C)/3 , Calculated and displayed to one significant digit				
Frequency	Range	0.0 - 1000.0 Hz				
	Accuracy	L	± 0.1 Hz @ 0.0 - 500 Hz			
		H	± 0.2 Hz @ 501 - 1000 Hz			
Current (rms)	Range	(A+B+C)/3				
	Accuracy	± (1% of reading + 5 counts) at 40 - 70 Hz ± (1% of reading + 5 counts) at 70.1 - 500 Hz, and output current (r.m.s.) > 0.200 A ± (1% of reading + 5 counts) at 501 - 1000 Hz, and output current (r.m.s.) > 0.300 A				
Power (W)	Range	A Power + B Power + C Power				
	Accuracy	Calculated Value				
Power Apparent (VA)	Range	A VA + B VA + C VA				
	Accuracy	Calculated Value				
Power Reactive (Q)	Range	A VAR + B VAR + C VAR				
	Accuracy	Calculated Value				
Power Factor	Range	0 - 1.000				
	Accuracy	Sum P / Sum VA, Calculated and displayed to three significant digits				
Measurement (Total) Linking Parallel DC		310XAC	320XAC	340XAC	360XAC	
Voltage	Range	0.0 - 420.0 V				
	Accuracy	± (1% of reading + 2 counts) > 5 V		± (1% of reading + 5 counts) > 5 V		
Current (rms)	Range	2	0.05 A - 26.00 A	0.05 A - 52.00 A	0.05 A - 104.00 A	0.05 A - 156.00 A
		3	0.05 A - 39.00 A	0.05 A - 78.00 A	0.05 A - 156.00 A	0.05 A - 234.00 A
	Accuracy	± (1% of reading + 5 counts) x # of Linked Units, Current > 1.00 A		± (1% of reading + 5 counts) x # of Linked Units, Current > 2.00 A	± (1% of reading + 5 counts) x # of Linked Units, Current > 3.00 A	
Power (W)	Range	2	0 W - 2600 W	0 W - 25200 W	0 W - 10400 W	0 W - 15600 W
		3	0 W - 3900 W	0 W - 7800 W	0 W - 15600 W	0 W - 23400 W
	Accuracy	± (2% of reading + 5 counts) x # of Linked Units				

Specifications subject to change

Key

L = Low Limit Range L (2) = Low Limit Range 2 Units Linked H (2) = High Limit Range 2 Units Linked 2 = 2 Units Linked
 H = High Limit Range L (3) = Low Limit Range 3 Units Linked H (3) = High Limit Range 3 Units Linked 3 = 3 Units Linked

Why We Use Counts

APT publishes some specifications using “counts” which allows us to provide a better indication of the tester’s capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range.

For example, if the resolution for voltage is 1V then 2 counts = 2V.