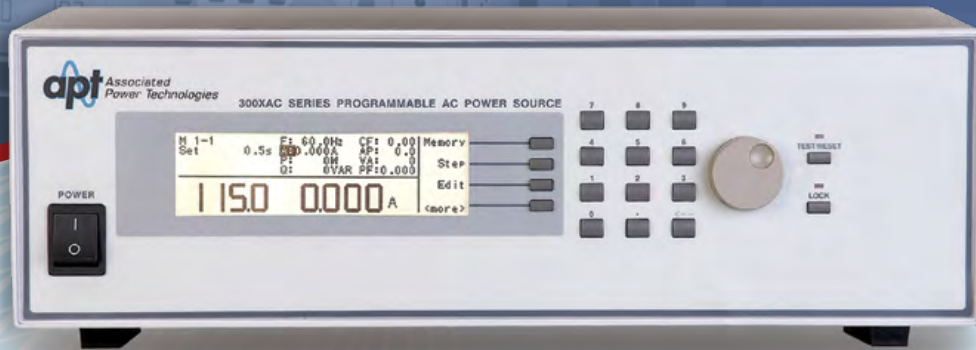


AC Power Sources

Manual - Automated - Modular



400XAC Series 3 Phase AC Power Sources €€

300XAC Series Modular AC Power Sources €€

7000 Series Automated AC Power Sources €€

6000 Series Automated AC Power Sources

5000 Series Manual AC Power Sources

LS Series Linear AC Power Sources €€

VariPLUS® Power Converter €€ *Model 104 Only*



APT...The Power of Value!

400XAC Series

3 Phase AC Power Sources



Overview

Our 400XAC Series automated 3Ø AC power sources provide an advanced 3Ø power source in a single box. When the smartCONFIG® option is installed the 400XAC can be switched from a 3Ø output to a 1Ø or DC output via the touch of a button. The 400XAC Series consists of two models: the 430XAC is a 3 kVA AC power source and the 460XAC is a 6 kVA AC power source.

The 400XAC Series also comes with your choice of an automated interface and rack mount handle kit at no extra charge. Choose from USB/RS-232, Ethernet, or GPIB. Both models provide advanced features with a user friendly interface, that make them ideal to use in testing lab or production line environments.

Features

- Programmable output voltages form 8.6 – 520 VAC (5.0 – 300 VAC per phase)
- Programmable output frequencies from 40.0 – 1000 Hz
- Single phase input power requirements
- Built-in power factor correction (PFC)
- Remote Input & Interlock
- External Trigger Capability
- Single Phase / Three Phase / DC output push button selectable (smartCONFIG® option)
- Advanced monitoring circuits monitor and measure voltage, current, peak current, power, apparent power, reactive power, power factor, and crest factor
- User selectable metering for total power or individual phase power
- 50 built-in memory locations with 9 test steps that can be linked to quickly store and recall test parameters for multiple product testing applications
- Independent transient generations for simulating voltage spikes or dips, brownouts
- Programmable starting & ending angles of the output sine wave
- External voltage sense capability
- Password protection and lockout capability
- NIST traceable calibration certificate (ISO 17025 certificates available)

APT...The Power of Value!



- **Industry-leading standard 2-year warranty**
- **Guaranteed 24-hour shipment or we pay the freight**



- **48-hour turnaround on all repairs**
- **45-day return policy – no questions asked**



Specifications - 400XAC Series

INPUT		430XAC	460XAC	
Phase		1Φ	1Φ or 3Φ	
Voltage		200 - 240 VAC	1Ø : 200~240 VAC ± 10% 3Ø3W : 200~240 VAC ± 10% 3Ø4W : 346~416 VAC ± 10%	
Frequency		47 - 63 Hz		
AC OUTPUT				
Power rating	1Ø2W	3000 VA	6000 VA	
	1Ø3W	Total 2000 VA (1000 VA per phase)	Total 4000 VA (2000 VA per phase)	
	3Ø4W	Total 3000 VA (1000 VA per phase)	Total 6000 VA (2000 VA per phase)	
	DC	3000 VA	6000 VA	
Max. Current (r.m.s)	1Ø2W	5-150 V	27.6 A at <110 V	55.2 A at <110 V
		5-300 V	13.8 A at <220 V	27.6 A at <220 V
	1Ø3W	5-150 V	9.2 A at <110 V for per phase	18.4 A at <110 V for per phase
		5-300 V	4.6 A at <220 V for per phase	9.2 A at <220 V for per phase
	3Ø4W	5-150 V	9.2 A at <110 V for per phase	18.4 A at <110 V for per phase
		5-300 V	4.6 A at <220 V for per phase	9.2 A at <220 V for per phase
Inrush Current (peak)	1Ø2W	5-150 V	110.4 A	220.8 A
		5-300 V	55.2 A	110.4 A
	1Ø3W	5-150 V	36.8 A for per phase	73.6 A for per phase
		5-300 V	18.4 A for per phase	36.8 A for per phase
	3Ø4W	5-150 V	36.8 A for per phase	73.6 A for per phase
		5-300 V	18.4 A for per phase	36.8 A for per phase
Phase		1Ø2W 1Ø3W 3Ø4W, provided option		
THD (Total Harmonic Distortion)		<0.5% (Resistive Load) at 40.0~70.0 Hz and output voltage within the 80~140 VAC at Low Range or the 160~280 VAC at High Range. <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the 80~140 VAC at Low Range or the 160~280 VAC at High Range.		
Crest Factor		≥ 3		
Line Regulation		± 0.1 V		
Load Regulation (Hardware)		± (1% of output + 1 V) at Resistive Load, < 400 μS response time		
Load Regulation (Software)		± 0.2 V, <1 S response time		
DC offset		≤±5 mV		
Poly-phase mode (3Ø4W) for per phase output setting		430XAC	460XAC	
Voltage	Range	5.0~300 VAC (phase), 8.6~520 VAC (line), 150/300 V Auto Range		
	Accuracy	± (0.2% of setting + 3 counts)		
Frequency	Range	40~1000 Hz Full Range Adjust		
	Accuracy	±0.03% of setting		
Starting & Ending Phase Angle	Range	0~359°		
	Accuracy	±1°(45~65 HZ)		
Current Hi Limit	5V~150 V	0.01~9.20 A	0.01~18.40 A	
	5V~300 V	0.01~4.60 A	0.01~9.20 A	
	Accuracy	± (2.0% of setting + 2 counts)		
OC Fold Back Response Time		< 1.4 s		
Ramp-Up Timer (second)	Range	0.0~999.9 s		
	Accuracy	± (0.1% + 0.05 sec)		
Ramp-Down Timer (second)	Range	0.0~999.9 s		
	Accuracy	± (0.1% + 0.05 sec)		
Delay Timer	Range	0.5 s~999.9 s 0.1 m~999.9 min 0.1 h~999.9 h		
	Accuracy	± (0.1% + 0.1 sec)		
Dwell Timer	Range	0, 0.5s~999.9h (0=continuous)		
	Accuracy	± (0.1% + 0.1 sec)		
Frequency	Range	0.0-1000 Hz		
	Resolution	0.1 Hz		
	Accuracy	±0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)		
Voltage	Range	0.0-420.0 V		
	Resolution	0.1 V		
	Accuracy	± (0.2% of reading + 3 counts)		

Specifications subject to change

Specifications - 400XAC Series

Poly-phase mode (3Φ4W) for per phase measurement			430XAC	460XAC
Current(r.m.s)	Range	L	0.005 A~1.200 A	0.005 A~2.400 A
		H	1.00 A~13.00 A	2.00 A~26.00 A
	Accuracy	L	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 3.6 A	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 7.2 A
		H	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 27.6 A	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A
Current(peak)	Range	0.0 A~38.0 A		0.0 A~76.0 A
	Accuracy	± (1% of reading + 5 counts) at 40.0-70.0 Hz ± (1.5% of reading + 10 counts) at 70.1 - 500 Hz ± (1.5% of reading + 10 counts) at 501 - 1000 Hz and CF<1.5		
Power	Range	L	0.0 W~120.0 W	0.0 W~240.0 W
		H	100 W~1300 W	200 W~2600 W
	Accuracy	L	± (2% of reading +15 counts) at 40.0-500 Hz and PF>=0.2 ± (2% of reading +30 counts) at 501-1000 Hz and PF>=0.5	
		H	± (2% of reading +5 counts) at 40.0-500 Hz and PF>=0.2 ± (2% of reading +15 counts) at 501-1000 Hz and PF>=0.5	
Power Factor	Range	0 - 1.000		
	Accuracy	W / VA ,Calculated and displayed to three significant digits		
Power Apparent (VA)	Range	L	0.0 VA~120.0 VA	0.0 VA~240.0 VA
		H	100 VA~1300 VA	200 VA~2600 VA
	Accuracy	V×A ,Calculated value		
Power Reactive (Q)	Range	L	0.0 VAR~120.0 VAR	0.0 VAR~240.0 VAR
		H	0 VAR~1300 VAR	0 VAR~2600 VAR
	Accuracy	$\sqrt{(VA)^2 - (W)^2}$,Calculated value		
Crest Factor	Range	0 - 10.00		
	Accuracy	Ap / A ,Calculated and displayed to two significant digits		
Poly-phase mode (3Ø4W) for Σ measurement			430XAC	460XAC
Frequency			0.0-1000.0 Hz	
			±0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)	
Voltage			$(A+B+C)/\sqrt{3}$	
			$(A+B+C)/\sqrt{3}$, Calculated and displayed to one significant digits	
Current(r.m.s)	Range	L	$(A+B+C)/3$	
		H	$(A+B+C)/3$	
	Accuracy	L	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 3.6 A	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 7.2 A
		H	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 27.6 A	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A
Power	Range	L	A Power + B Power + C Power	
		H	A Power + B Power + C Power	
	Accuracy	L	A Power + B Power + C Power, Calculated value	
		H	A Power + B Power + C Power, Calculated value	
Power Factor	Range	0 - 1.000		
	Resolution	0.001		
	Accuracy	SUM P / SUM VA ,Calculated and displayed to three significant digits		
Power Apparent (VA)	Range	L	A VA + B VA + C VA	
		H	A VA + B VA + C VA	
	Accuracy	L	A VAR + B VAR + C VAR , Calculated value	
		H	A VAR + B VAR + C VAR , Calculated value	
Power Reactive (Q)	Range	L	A VAR + B VAR + C VAR	
		H	A VAR + B VAR + C VAR	
	Accuracy	L	A VAR + B VAR + C VAR, Calculated value	
		H	A VAR + B VAR + C VAR, Calculated value	
Single-phase mode (1Ø2W) Setting			430XAC	460XAC
Voltage	Range	5.0~300 VAC, 150/300 V Auto Range		
	Resolution	0.1 V		
	Accuracy	±(0.2% of setting + 3 counts)		

Specifications subject to change

Specifications - 400XAC Series

Single-phase mode (1Ø2W) Setting		430XAC	460XAC	
Frequency	Range	40~1000 Hz Full Range Adjust		
	Resolution	0.1 Hz at 40.0~99.9 Hz , 1 Hz at 100~1000 Hz		
	Accuracy	±0.03% of setting		
Starting & Ending Phase Angle	Range	0~359°		
	Resolution	1°		
	Accuracy	±1°(45~65 Hz)		
Current Hi Limit	5V~150V	0.01~27.60 A	0.01~55.20 A	
	5V~300V	0.01~13.80 A	0.01~27.60 A	
	Accuracy	± (2.0% of setting + 2 counts)		
OC Fold Back Response Time		< 1.4 s		
Single-phase mode (1Ø2W) measurement		430XAC	460XAC	
Frequency	Range	0.0~1000 Hz		
	Accuracy	±0.1 Hz (501~1000 Hz Accuracy ±0.2 Hz)		
Voltage	Range	0.0~420.0 V		
	Accuracy	± (0.2% of reading + 3 counts)		
Current(r.m.s)	Range	0.05 A~39.00 A	0.05 A~78.00	
	Accuracy	± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 82.8 A	± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 165.6 A	
Current(peak)	Range	0.0 A~114.0 A	0.0 A~228.0 A	
	Accuracy	± (1% of reading + 5 counts) at 40.0~70.0 Hz ± (1.5% of reading + 10 counts) at 70.1~500 Hz ± (1.5% of reading + 10 counts) at 501~1000 Hz and CF<1.5		
Power	Range	0 W~3900 W	0 W~7800 W	
	Accuracy	± (2% of reading +5 counts) at 40.0~500 Hz and PF>=0.2 ± (2% of reading +15 counts) at 501~1000 Hz and PF>=0.5		
Power Factor	Range	0 - 1.000		
	Accuracy	W / VA ,Calculated and displayed to three significant digits		
Power Apparent	Range	0 VA~3900 VA	0 VA~7800 VA	
	Accuracy	V×A ,Calculated value		
Power Reactive (Q)	Range	0 VAR~3900 VAR	0 VAR~7800 VAR	
	Accuracy	$\sqrt{(VA)^2 - (W)^2}$,Calculated value		
Crest Factor	Range	0 - 10.00		
	Accuracy	Ap / A ,Calculated and displayed to two significant digits		
Poly-phase mode (1Ø3W) for per phase output setting		430XAC	460XAC	
Voltage	Range	5.0~300 VAC (phase), 10.0~600 VAC (line), 150/300 V Auto Range		
	Accuracy	±(0.2% of setting + 3 counts)		
Frequency	Range	40~1000 Hz Full Range Adjust		
	Accuracy	±0.03% of setting		
Starting & Ending Phase Angle	Range	0~359°		
	Accuracy	±1°(45~65 Hz)		
Current RI Limit	5V~150V	0.01~9.20 A	0.01~18.40 A	
	5V~300V	0.01~4.60 A	0.01~9.20 A	
	Accuracy	± (2.0% of setting + 2 counts)		
OC Fold Back Response Time		< 1.4 s		
Poly-phase mode (1Ø3W) for per phase measurement		430XAC	460XAC	
Frequency	Range	0.0~1000 Hz		
	Accuracy	±0.1 Hz (501~1000 Hz Accuracy ±0.2 Hz)		
Voltage	Range	0.0~420.0 V		
	Accuracy	± (0.2% of reading + 3 counts)		
Current (r.m.s)	Range	L	0.005 A~1.200 A	0.005 A~2.400 A
		H	1.00 A~13.00 A	2.00 A~26.00 A
	Accuracy	L	± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 3.6 A	± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 7.2 A
		H	± (1% of reading + 5counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 27.6 A	± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A

Specifications subject to change

Specifications - 400XAC Series

Poly-phase mode (1Ø3W) for per phase measurement		430XAC	460XAC	
Current (peak)	Range	0.0 A~38.0 A	0.0 A~76.0 A	
	Accuracy	± (1% of reading + 5 counts) at 40.0-70.0 Hz ± (1.5% of reading + 10 counts) at 70.1-500 Hz ± (1.5% of reading + 10 counts) at 501-1000 Hz and CF<1.5		
Power	Range	L	0.0 W~120.0 W	
		H	100 W~1300 W	
	Accuracy	L	± (2% of reading +15 counts) at 40.0-500 Hz and PF>=0.2 ± (2% of reading +30 counts) at 501-1000 Hz and PF>=0.5	
		H	± (2% of reading +5 counts) at 40.0-500 Hz and PF>=0.2 ± (2% of reading +15 counts) at 501-1000 Hz and PF>=0.5	
Power Factor	Range	0 - 1.000		
	Accuracy	W / VA ,Calculated and displayed to three significant digits		
Power Apparent (VA)	Range	L	0.0 VA~120.0 VA	
		H	100 VA~1300 VA	
	Accuracy	V×A ,Calculated value		
Power Reactive (Q)	Range	L	0.0 VAR~120.0 VAR	
		H	0 VAR~1300 VAR	
	Accuracy	$\sqrt{(VA)^2 - (W)^2}$,Calculated value		
Crest Factor	Range	0-10.00		
	Accuracy	Ap / A ,Calculated and displayed to two significant digits		
Poly-phase mode (1Ø3W) for L1-L2 measurement		430XAC	460XAC	
Frequency	Range	0.0-1000.0 Hz		
	Accuracy	± 0.1 Hz (501-1000 Hz Accuracy ± 0.2 Hz)		
Voltage	Range	L1 Voltage + L2 Voltage		
	Accuracy	L1 Voltage + L2 Voltage, Calculated and displayed to one significant digits		
Current(r.m.s)	Range	L	(L1 Current + L2 Current)/2	
		H	(L1 Current + L2 Current)/2	
	Accuracy	L	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 3.6 A	
		H	± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 27.6 A	
Power	Range	L	L1 Power + L2 Power	
		H	L1 Power + L2 Power	
	Accuracy	L	L1 Power + L2 Power, Calculated value	
		H		
Power Factor	Range	0 - 1.000		
	Accuracy	(L1 P + L2 P) / (L1 VA + L2 VA) ,Calculated and displayed to three significant digits		
Power Apparent (VA)	Range	L	L1 VA + L2 VA	
		H	L1 VA + L2 VA	
	Accuracy	L	L1 VA + L2 VA ,Calculated value	
		H		
Power Reactive (Q)	Range	L	L1 VAR + L2 VAR	
		H	L1 + VAR + L2 VAR	
	Accuracy	L	L1 VAR + L2 VAR ,Calculated value	
		H		
DC OUTPUT				
Max. Power		3000 W	6000 W	
Max. Current	0-210 V	14.4 A	28.8 A	
	0-420 V	7.2 A	14.4 A	
Ripple and Noise (RMS)		Range: 5-210 V < 700 mV Range: 5-420 V < 1100 mV		
Ripple and Noise (p-p)		< 4.0 Vp-p		
DC SETTINGS				
Voltage	Range	5-210 V / 5-420 V Selectable		
	Accuracy	± (0.2% of setting + 3 counts)		
Current Hi Limit	5 V-210 V	14.40 A	0.10 - 28.80 A	
	5 V-420 V	7.20 A	0.10 - 14.40 A	
	Accuracy	± (2.0% of setting + 2 counts)		
OC Fold Back Response Time		< 1.4 s		

Specifications subject to change

Specifications - 400XAC Series

DC MEASUREMENT		430XAC	460XAC
Voltage	Range	0.0-420.0 V	
	Accuracy	±(0.2% of setting + 3 counts)	
Current	Range	0.05 A~19.50 A	0.05 A~39.00 A
	Accuracy	± (1% of reading +5 counts)	
Power	Range	0 W~3900 W	0 W~7800 W
	Accuracy	± (2% of reading +5 counts)	
Protection			
Software OCP		Over Current 110% of full rated current>1 second	
Hardware OFL		The single unit Hardware OFL:Over Current 105 ~110% of full load. 3.3 second time constant. 15 second reaction from off state with 110% load and software disabled	
Output Short Shut Down Speed		<1 second	
Software OPP		When over Power 105 ~ 110% of full power >5 second. When over Power >110% of full power <1 second.	
Software OTP		Temperature over 95 degree C on the power amp and PFC heatsink	Temperature over 120 degree C on the power amp and PFC heatsink
Software OVP	L	When output frequency <100Hz, maximum voltage deviation +5V When output frequency 101-500Hz, maximum voltage deviation +15V When output frequency 501-1000Hz, maximum voltage deviation +20V	
	H	When output frequency <100Hz, maximum voltage deviation +10V When output frequency 101-500Hz, maximum voltage deviation +30V When output frequency 501-1000Hz, maximum voltage deviation +40V	
Software LVP	L	When output frequency <100Hz, maximum voltage deviation -5V >0.5 second When output frequency 101-500Hz, maximum voltage deviation -15V >0.5 second When output frequency 501-1000Hz, maximum voltage deviation -20V >0.5 second	
	H	When output frequency <100Hz, maximum voltage deviation -10V >0.5 second When output frequency 101-500Hz, maximum voltage deviation -30V >0.5 second When output frequency 501-1000Hz, maximum voltage deviation -40V >0.5 second	
Reverse Current Protection (RCP)		Over 75W	
General			
Transient (only for 40~70 Hz)		Trans-Volt 0.0-300.0 V Resolution 0.1 V Trans-Site 0°~359° Resolution 1° Trans-Time 0.5-999.9 mS Resolution 0.1 mS Trans-Cycle 0-9999, 0-Constant	
Operation Key Feature		Soft key, Numeric key, Rotary Knob.	
Remote Input Signal		Test, Reset, Interlock (*12), Recall program memory 1 through 7	
Remote Output Signal		Pass, Fail , Test-in Process	
Key Lock		Yes, Password Driven	
Memory		50 memories, 9 steps/memory	
Ext Trigger		START / END / BOTH / OFF in the Program mode, Output Signal 5 V ,BNC type	
Alarm Volume Setting		Range: 0-9 ;0=OFF, 1 is softest volume, 9 is loudest volume.	
Graphic Display		240 x 64 dot resolution Monographic LCD /Contrast 9 Levels 1-9	
PFC		PF ≥ 0.97 at Full load	
Efficiency		≥78% (at Full load)	
Auto Loop cycle		0 = Continuous, OFF, 2~9999	
Over Current Fold Back		On/Off, Setting On when output current over setting Hi-A value it will fold back output voltage to keep constant output current is setting Hi-A value, Response time <1400ms	
Safety		CE	
Dimension		430(W) x 400.5(H) x 500(D) mm	
Weight		105.8 lbs (48 kg)	125.6 lbs (57 kg)
Operation Enviroment		0-40°/20-80% RH	

Specifications subject to change

APT...The Power of Value!

AC Power Sources for All Applications

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