

400XAC Series



3 Phase AC Power Sources

With a unique feature set and competitive price point, our 400XAC Series provides 3Ø AC power in a single box. Our exclusive SmartCONFIG feature allows you to switch from 1Ø to 3Ø or DC output with the push of a button. This maximizes your investment while giving you the AC power that your application needs. 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.

Features

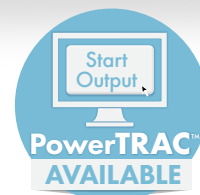
- Exclusive SmartCONFIG feature allows for push button switch of 1Ø, 3Ø, or DC output
- Single phase input power requirements
- 50 built-in memory locations with 9 test steps
- Built-in power factor correction (PFC)
- Advanced metering circuits monitor voltage, current, peak current, power, apparent 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
- Rack mount handle kit included

Standard

- USB/RS-232 Interface

Options

- GPIB Interface
- Ethernet Interface



Applicable Industries



Aerospace



Appliance



Laboratory



Motor

APT Benefits



INPUT			430XAC		460XAC				
Phase			1Ø		1Ø or 3Ø				
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 (RMS)			1Ø2W	5- 150 V		27.6 A @ ≤110 V		55.2 A @ ≤110 V	
				5 - 300 V		13.8 A @ ≤220 V		27.6 A @ ≤220 V	
			1Ø3W	5 - 150 V		9.2 A @ ≤110 V for per phase		18.4 A @ ≤110 V for per phase	
				5 - 300 V		4.6 A @ ≤220 V for per phase		9.2 A @ ≤220 V for per phase	
			3Ø4W	5 - 150 V		9.2 A @ ≤110 V for per phase		18.4 A @ ≤110 V for per phase	
				5 - 300 V		4.6 A @ ≤220 V for per phase		9.2 A @ ≤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	1 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, 1s~999.9 h (0=continuous)						
		Accuracy	± (0.1% + 0.1 sec)						
Poly-phase mode (3Ø4W) for per phase measurement			430XAC		460XAC				
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 – 400XAC Series

Poly-phase mode (3Ø4W) for per phase measurement			430XAC		460XAC	
Current (RMS)	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, CF <1.5 and Current (peak) ≤3.6 A		± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz, CF <1.5 and 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, CF <1.5 and Current (peak) ≤27.6 A		± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz, CF < 1.5 and 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	
Power Reactive (Q)	Accuracy		V×A, Calculated value			
	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	Range		0.0-1000.0 Hz			
	Accuracy		± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)			
Voltage	Range		0.0-727.5 V			
	Calculated Formula		$(A+B+C)/\sqrt{3}$, Calculated and displayed to one significant digits			
Current (RMS)	Range	L	0.005A~1.200A		0.005A~2.400A	
		H	1.00A~13.00A		2.00A~26.00A	
	Calculated Formula	L	$\frac{\sum VA}{\sum V} / \sqrt{3}$			
		H				
Power	Range	L	0.0W~360.0W		0.0W~720.0W	
		H	300W~3900W		600W~7800W	
	Accuracy	L	A Power + B Power + C Power, Calculated value			
		H				
Power Factor	Range		0 - 1.000			
	Resolution		0.001			
	Accuracy		$\frac{\sum P}{\sum VA}$ Calculated and displayed to three significant digits			
Power Apparent (VA)	Range	L	0.0VA~360.0VA		0.0VA~720.0VA	
		H	300VA~3900VA		600VA~7800VA	
	Calculated Formula	L	$\sqrt{(\sum W)^2 + (\sum Q)^2}$			
		H				
Power Reactive (Q)	Range	L	0.0VAR~360.0VAR		0.0VAR~720.0VAR	
		H	300VAR~3900VAR		600VAR~7800VAR	
	Accuracy	L	A VAR + B VAR + C VAR, Calculated value			
		H				
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)			

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 (RMS)	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, CF <1.5 and Current (peak) ≤82.8 A		± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz, CF <1.5 and 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 (RMS)	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, CF <1.5 and Current (peak) ≤3.6 A		± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz, CF <1.5 and Current (peak) ≤7.2 A		
		H	± (1% of reading + 5counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz, CF <1.5 and Current (peak) ≤27.6 A		± (1% of reading +5 counts) at 40.0~500 Hz ± (1% of reading +5 counts) at 501~1000 Hz, CF <1.5 and Current (peak) ≤55.2 A		

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		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		VxA, 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		$\sqrt{(\text{VA})^2 - (\text{W})^2}$, 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		0.0-840.0V			
	Accuracy		L1 Voltage + L2 Voltage, Calculated and displayed to one significant digits			
Current (RMS)	Range	L	0.005A~1.200A		0.005A~2.400A	
		H	1.00A~13.00A		2.00~26.00A	
	Calculated Formula	L	$\frac{\sum I^2}{\sum I}$			
		H				
Power	Range	L	0.0W~240.0W		0.0W~480.0W	
		H	200W~2600W		400W~5200W	
	Accuracy	L	L1 Power + L2 Power, Calculated value			
		H				
Power Factor	Range		0 - 1.000			
	Calculated Formula		(L1 P + L2 P) / (L1 VA + L2 VA), Calculated and displayed to three significant digits			
Power Apparent (VA)	Range	L	0.0W~240.0VA		0.0W~480.0VA	
		H	200W~2600VA		± 400W~5200VA	
	Calculated Formula	L	$\sqrt{(\sum W)^2 + (\sum Q)^2}$ Calculated value			
		H				
Power Reactive (Q)	Range	L	0.0VAR ~ ± 240.0VAR		0.0VAR ~ ± 480.0VAR	
		H	± 200VAR ~ ± 2600VAR		± 400VAR ~ ± 5200VAR	
	Calculated Formula	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			

DC MEASUREMENT		430XAC	460XAC
Voltage	Range	0.0-420.0 V	
	Accuracy	± (0.2% of setting + 5 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	
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, 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 Agency		CE Listed	
Dimensions (W x H x D)		430 x 400.5 x 500 mm	
		16.93 x 15.77 x 19.69 in	
Net Weight		105.8 lbs (48 kg)	125.6 lbs (57 kg)
Operation Environment		0-40°/20-80% RH	

Specifications subject to change

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.