

400XAC

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.



Applicable Industries



Aerospace



Appliance



Laboratory



Motor

EEC Benefits



Standard

USB/RS-232 Interface

Options

GPIO Interface

Ethernet Interface



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Specifications – 400XAC

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
	1Ø3W		Total 2000 VA (1000 VA per phase)
	3Ø4W		Total 3000 VA (1000 VA per phase)
	DC		3000 VA
Max. Current (RMS)	1Ø2W	5- 150 V	27.6 A @ ≤110 V
		5- 300 V	13.8 A @ ≤220 V
	1Ø3W	5- 150 V	9.2 A @ ≤110 V for per phase
		5- 300 V	4.6 A @ ≤220 V for per phase
	3Ø4W	5- 150 V	9.2 A @ ≤110 V for per phase
		5- 300 V	4.6 A @ ≤220 V for per phase
Inrush Current (peak)	1Ø2W	5- 150 V	110.4 A
		5- 300 V	55.2 A
	1Ø3W	5- 150 V	36.8 A for per phase
		5- 300 V	18.4 A for per phase
	3Ø4W	5- 150 V	36.8 A for per phase
		5- 300 V	18.4 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

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
	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	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	$\frac{\sum I^2}{\sum V} / \sqrt{3}$	
		H		
Power	Range	L	0.0W~360.0W	0.0W~720.0W
		H	300W~3900W	600W~7800W
	Accuracy	L	$\frac{\sum P}{\sum I^2}$ A Power + B Power + C Power, Calculated value	
		H		
Power Factor	Range	0 - 1.000		
	Resolution	0.001		
	Accuracy	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)		

Specifications – 400XAC

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

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		$\sqrt{(VA)^2 - (W)^2}$, 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		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	$\frac{\sum I^2}{\sum V}$	
		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	

Specifications – 400XAC

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

EEC publishes some specifications using “counts” which allows us to provide a better indication of the power source’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.