400XAC Series

3 Phase AC Power Sources



Overview

Our 400XAC Series of CE marked Automated 3 Φ AC Power Sources provide an advanced AC Power Source available in 3 Φ output power. When the SmartConfig® option is installed the 400XAC Series can automatically be switched from a 3 Φ output to a 1 Φ 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 0.0 520 VAC (0.0 – 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 Selectable Output (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



• 45-day return policy – no questions asked







INPUT			430XAC	460XAC	
Phase	Phase		1Ф	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					
	1Ø2W		3000 VA	6000 VA	
Power rating	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	
	1Ø2W	0 - 150 V	27.6 A at <110 V	55.2 A at <110 V	
	INDEVV	0 - 300 V	13.8 A at <110 V	27.6 A at <110 V	
Max. Current	1Ø3W	0 - 150 V	9.2 A at <110 V for per phase	18.4 A at <110 V for per phase	
(r.m.s)	10000	0 - 300 V	4.6 A at <220 V for per phase	9.2 A at <220 V for per phase	
	3Ø4W	0 - 150 V	9.2 A at <110 V for per phase	18.4 A at <110 V for per phase	
	36444	0 - 300 V	4.6 A at <220 V for per phase	9.2 A at <220 V for per phase	
	1Ø2W	0 - 150 V	110.4 A	220.8 A	
	10200	0 - 300 V	55.2 A	110.4 A	
Inrush Current	1Ø3W	0 - 150 V	36.8 A for per phase	73.6 A for per phase	
(peak)	IDSVV	0 - 300 V	18.4 A for per phase	36.8 A for per phase	
	3Ø4W	0 - 150 V	36.8 A for per phase	73.6 A for per phase	
	30444	0 - 300 V	18.4 A for per phase	36.8 A for per phase	
	Phase		1Ø2W 1Ø3W 3Ø4	W, provided option	
Phase					
THD (Total Harmo	onic Dist	ortion)	<0.5% (Resistive Load) at 40.0~70.0 Hz a at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the	-280 VAC at High Range. le 80∼140 VAC at Low Range or the 160∼280 VAC at High Range.	
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THD (Total Harmo Crest Factor Line Regulation Load Regulation Load Regulation	ı n (Hard	ware)	<0.5% (Resistive Load) at 40.0~70.0 Hz a at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the total content of	-280 VAC at High Range. le 80~140 VAC at Low Range or the 160~280 VAC at High Range. 3 1 V e Load, < 400 μS response time esponse time	
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THD (Total Harmo Crest Factor Line Regulation Load Regulation Load Regulation DC offset Poly-phase mo for per phase outpu Voltage Frequency Starting & Ending Phase Angle Current Hi Limit (OC Fold=OFF) OC Fold Back (OC Fold = ON) (*10) OC Fold Back Re Ramp-Up Timer (second) Ramp-Down	n (Hard n (Soft de (30- n (Soft) de (30- n (Soft) de (30- n (Soft) Range Accura Range Accura Range Accura OV~150 OV~300 Accura Range Range Accura	ware) ware) wy cy cy cy cy ty ty ty ty ty t	<0.5% (Resistive Load) at 40.0~70.0 Hz at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the ± 0.0 ± 0.0 ± 0.0 ± 0.0 ± 0.0 ± 0.0 ± 0.0 ± 0.0 ×	-280 VAC at High Range. le 80~140 VAC at Low Range or the 160~280 VAC at High Range. 3 1 V le Load, < 400 μS response time lesponse time mV 460XAC AC (line), 150/300 V Auto Range ling + 3 counts) Il Range Adjust of setting 59° -65 HZ) 0.01~18.40 A 0.01~9.20 A ling + 2 counts) 4 s 99.9 s 0.05 sec)	
THD (Total Harmo Crest Factor Line Regulation Load Regulation Load Regulation DC offset Poly-phase mo for per phase outpu Voltage Frequency Starting & Ending Phase Angle Current Hi Limit (OC Fold=OFF) OC Fold Back	n (Hard n (Soft) de (30- t setting Range Accura Range Accura 0V~15(0V~30(Accura Range Accura	ware) ware) wy cy cy cy cy ty ty ty ty ty t	<0.5% (Resistive Load) at 40.0~70.0 Hz at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the ± 0. ± 0. ± (1% of output +1 V) at Resistive ± 0.2 V,<1 S results to ± 0.0 % of sett ± 0.2% of sett ± 0.0 % of sett ± 0.0	-280 VAC at High Range. le 80~140 VAC at Low Range or the 160~280 VAC at High Range. 3 1 V le Load, < 400 μS response time lesponse time mV 460XAC AC (line), 150/300 V Auto Range ling + 3 counts) Il Range Adjust of setting 59° -65 HZ) 0.01~18.40 A 0.01~9.20 A ling + 2 counts) 4 s 99.9 s 0.05 sec) 99.9 s 0.05 sec) 99.9 s 99.9 min 199.9 h	
THD (Total Harmo Crest Factor Line Regulation Load Regulation Load Regulation DC offset Poly-phase mo- for per phase outpu Voltage Frequency Starting & Ending Phase Angle Current Hi Limit (OC Fold=OFF) OC Fold Back (OC Fold = ON) (*10) OC Fold Back Re Ramp-Up Timer (second) Ramp-Down Timer (second)	n (Hard n (Soft de (30- n (Soft) de (30- n (Soft) de (30- n (Soft) Range Accura Range Accura Range Accura OV~15(0V~30(Accura Range Accura Range Accura Range Accura	ware) ware) ware) cy cy cy ty trime	<0.5% (Resistive Load) at 40.0~70.0 Hz at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the ± 0. ± 0. ± (1% of output +1 V) at Resistive ± 0.2 V,<1 S results to ± 0.0 for the total section of	-280 VAC at High Range. te 80~140 VAC at Low Range or the 160~280 VAC at High Range. 3 1 V te Load, < 400 μS response time esponse time mV 460XAC AC (line), 150/300 V Auto Range ting + 3 counts) Il Range Adjust of setting 59° -65 HZ) 0.01~18.40 A 0.01~9.20 A ting + 2 counts) 4 s 99.9 s 0.05 sec) 99.9 s 0.05 sec) 99.9 s 99.9 min 199.9 h	
THD (Total Harmo Crest Factor Line Regulation Load Regulation Load Regulation DC offset Poly-phase mo- for per phase outpu Voltage Frequency Starting & Ending Phase Angle Current Hi Limit (OC Fold=OFF) OC Fold Back (OC Fold = ON) ('10) OC Fold Back Re Ramp-Up Timer (second) Ramp-Down Timer (second)	n (Hard n (Soft de (30- n (Soft) de (30- n (Soft) de (30- n (Soft) Range Accura Range Accura Range Accura 0V~15(0V~30(Accura esponse Range Accura Range Accura Range Accura	ware) ware) ware) cy cy cy ty trime	<0.5% (Resistive Load) at 40.0~70.0 Hz at Low Range or the 160~ <1% (Resistive Load) at 70.1~1000 Hz and output voltage within the ± 0. ± 0. ± (1% of output +1 V) at Resistive ± 0.2 V,<1 S results to ± 0.0 % of sett ± 0.2% of sett ± 0.0 % of sett ± 0.0	-280 VAC at High Range. le 80~140 VAC at Low Range or the 160~280 VAC at High Range. 3 1 V le Load, < 400 μS response time lesponse time mV 460XAC AC (line), 150/300 V Auto Range ling + 3 counts) Il Range Adjust of setting 59° -65 HZ) 0.01~18.40 A 0.01~9.20 A ling + 2 counts) 4 s 99.9 s 0.05 sec) 99.9 s 0.05 sec) 99.9 s 99.9 min 199.9 h -0.1 sec)	

Poly-phase mode (3Ф4W) for per phase measurement		or	430XAC	460XAC	
	Range		0.0-10	00 Hz	
requency	Resolution		0.1	Hz	
	Accuracy		±0.1 Hz (501-1000 Hz Acurracy ±0.2 Hz)		
	Range		0.0-420.0 V		
oltage	Resolution		0.1 V		
	Accuracy		± (0.2% of reading + 3 counts)		
	Range	L	0.005 A~1.200 A	0.005 A~2.400 A	
		Н	1.00 A~13.00 A	2.00 A~26.00 A	
Gurrent(r.m.s)	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	
		н	± (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	
	Range		0.0 A~38.0 A	0.0 A~76.0 A	
urrent(peak)	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		
	Range	L	0.0 W~120.0 W	0.0 W~240.0 W	
		Н	100 W~1300 W	200 W~2600 W	
ower	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		
			± (2% of reading +5 counts) at 40.0-500 Hz and PF>=0.2		
		H	± (2% of reading +15 counts) at 501-1000 Hz and PF>=0.5		
ower Factor	Range		0 - 1.000		
	Accuracy		W / VA ,Calculated and displayed to three significant digits		
ower Apparent	Range	L	0.0 VA~120.0 VA	0.0 VA~240.0 VA	
'A)		Н	100 VA~1300 VA	200 VA~2600 VA	
	Accuracy		V×A ,Calculated value		
ower	Range	L	0.0 VAR~120.0 VAR	0.0 VAR~240.0 VAR	
eactive (Q)		Н	0 VAR~1300 VAR	0 VAR~2600 VAR	
	Accuracy		$\sqrt{(VA)^2 - (W)^2}$,C	alculated value	
rest Factor	Range		0 - 10.00		
	Accuracy		Ap / A ,Calculated and displayed to two significant digits		
oly-phase mode (3Ø4W) for		l) for	430XAC	460XAC	
measuremen	it		400/AG	400AA0	
requency			0.0-1000.0 Hz ±0.1 Hz (501-1000 Hz Acurracy ±0.2 Hz)		
oltage			(A+B+C)/√3		
			(A+B+C)/√3, Calculated and displayed to one significant digits		
urrent(r.m.s)	Range	L	(A+B+C)/3		
		Н	(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	
		Н	± (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	

Poly-phase mode (3Ø4W) for Σ measurement		for	430XAC	460XAC
Current(peak)	urrent(peak) Range		N/A	
	Accuracy			
Power	Range L		A Power + B Po	
		H	A Power + B Po	ower + C Power
	Accuracy L 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 V	
,		Н	A VA + B V	/A + C VA
	Accuracy	H	A VAR + B VAR + C V	AR , Calculated value
Power (O)	Range	L	A VAR + B V	AR + C VAR
Reactive (Q)		Н	A VAR + B VAR + C VAR	
	Accuracy	L H	A VAR + B VAR + C VAR,Calculated value	
Crest Factor	Range		N/A	
Single-phase m	Accuracy	A()		
Single-phase m Setting	100e (1921	")	430XAC	460XAC
/oltage	Range		0.0~300 VAC, 150	300 V Auto Range
	Resolution	ı	0.1 V	
	Accuracy		±(0.2% of setting + 3 counts)	
requency	Range		40~1000 Hz Full Range Adjust	
	Resolution	1	0.1 Hz at 40.0~99.9 Hz , 1 Hz at 100~1000 Hz	
	Accuracy		±0.03% of setting	
Starting & Ending Phase	Range		0~359°	
Angle	Resolution	1	10	
	Accuracy		±1°(45~65 HZ)	
Current Hi Limit (OC Fold=OFF)	0V~150V 0V~300V		0.01~27.60 A	0.01~55.20 A
OC Fold Back OC Fold = ON)			0.01~13.80 A	0.01~27.60 A
<u>, , , , , , , , , , , , , , , , , , , </u>	Accuracy	Time		ing + 2 counts)
Ramp-Up	Response Time Range		< 1.4 s 0.0~999.9 s	
Timer (Second)	Accuracy		± (0.1% + 0.05 sec)	
Ramp-Down	Range		0.0~999.9 s	
Timer (second)	Accuracy			
Delay Timer	7 toodi doy		± (0.1% + 0.05 sec) 0.5 s~999.9 s	
zolay rillio.			0.5 8~999.9 s 0.1 m~999.9 min 0.1 h~999.9 h	
Dwell Timer			0, 0.5 s~999.9 h (0=continuous)	
Single-phase m	node (1Ø2)	N)		
measurement			430XAC	460XAC
Frequency	Range		0.0~1000 Hz	
	Accuracy		±0.1 Hz (501~1000 Hz Acurracy ±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 co ± (1.5% of reading + 10	ounts) 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	or Range		0 - 1.000	
	Accuracy		W / VA ,Calculated and displayed to three significant digits	

	10de (1Ø2	w)	430XAC	460XAC
Power Apparent	Range		0 VA~3900 VA	0 VA~7800 VA
	Accuracy		V×A ,Calcul	ated value
ower	Range		0 VAR~3900 VAR	0 VAR~7800 VAR
Reactive (Q)	Accuracy		$\sqrt{(VA)^2 - (W)^2}$, C	alculated value
Crest Factor	Range		0 - 10	0.00
	Accuracy		Ap / A ,Calculated and displa	yed to two significant digits
Poly-phase mod per phase outpu		for	430XAC	460XAC
/oltage	Range Accuracy		0.0~300 VAC (phase), 0.0~600 V/	AC (line), 150/300 V Auto Range
			±(0.2% of setting + 3 counts)	
Frequency	Range Accuracy		40~1000 Hz Full Range Adjust	
			±0.03% of setting	
Starting &	Range		0~359°	
Ending Phase Angle	Accuracy		±1°(45~65 HZ)	
Current RI Limit	0V~150V		0.01~9.20 A	0.01~18.40 A
OC Fold=OFF) OC Fold Back	0V~300V		0.01~4.60 A	0.01~9.20 A
OC Fold = ON)	Accuracy		± (2.0% of setti	
OC Fold Back R		Time	< 1.	
Ramp-Up	Range		0.0~99	
Timer	Accuracy			······
(Second) Ramp-Down	·		± (0.1% + 0.05 sec)	
Kamp-Down Timer	Range		0.0~98	
(second)	Accuracy		± (0.1% +	0.05 sec)
Delay Timer	Range		0.5 s~9	
			0.1 m~999.9 min	
			0.1 h~999.9 h	
	Accuracy		± (0.1% + 0.1 sec)	
Dwell Timer	Range		0, 0.5 s~999.9 h (0=continuous)	
	Accuracy		± (0.1% + 0.1 sec)	
Poly-phase mod			430XAC	460XAC
per phase meas	surement		HOOKING	
_	Range		0.0-10	00 Hz
Frequency	Tallye			
Frequency	Accuracy		±0.1 Hz (501-1000 H	z Acurracy ±0.2 Hz)
	<u> </u>		±0.1 Hz (501-1000 H	
	Accuracy			0.0 V
	Accuracy Range Accuracy	L	0.0-42	0.0 V
	Accuracy Range	L	0.0-42 ± (0.2% of readi	0.0 V ing + 3 counts)
Frequency Voltage Current (r.m.s)	Accuracy Range Accuracy Range		0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 A ± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 A ± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5
Voltage Current	Accuracy Range Accuracy Range Accuracy	Н	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 A \pm (1% of reading +5 counts) at 40.0-500 Hz \pm (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) \leq 7.2 A
Voltage Current	Accuracy Range Accuracy Range	Н	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 A ± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 A ± (1% of reading +5 counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5
Voltage Current	Accuracy Range Accuracy Range Accuracy	L	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 A \pm (1% of reading +5 counts) at 40.0-500 Hz \pm (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) \leq 7.2 A \pm (1% of reading +5 counts) at 40.0-500 Hz \pm (1% of reading +5 counts) at 501-1000 Hz and CF<1.5
Current (r.m.s)	Accuracy Range Accuracy Range Accuracy	L	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz \$	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 40.0-500 Hz ± (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 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 70.1-500 Hz
Current r.m.s)	Accuracy Range Accuracy Range Accuracy Range Accuracy	L	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £perice reading + 5 counts) at 40.0-500 Hz £current (peak) ≤ 27.6 A 0.0 A~38.0 A ± (1% of reading + 5 counts) at (1% of reading + 5 counts) at (1.5% of reading + 10)	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 70.1-500 Hz
Current (r.m.s)	Range Accuracy Range Accuracy Range Accuracy	H	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £RMMcolforeading of biolography at 5000 Mz 2000 Mc 27.6 A 0.0 A~38.0 A ± (1% of reading + 5 counts) at 40.0-500 Mz ± (1.5% of reading + 10 counts) at (1.5% of reading	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 70.1-500 Hz) at 501-1000 Hz and CF<1.5 0.0 W~240.0 W
Current (r.m.s)	Accuracy Range Accuracy Range Accuracy Range Accuracy	H L	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £panional reading in bourness at the bounder and CF<1.5 *Current (peak) ≤ 27.6 A 0.0 A~38.0 A ± (1% of reading + 5 counts) ± (1.5% of reading + 10 counts) 0.0 W~120.0 W 100 W~1300 W	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 70.1-500 Hz 0 at 501-1000 Hz and CF<1.5 0.0 W~240.0 W 200 W~2600 W
Current (r.m.s)	Accuracy Range Accuracy Range Accuracy Range Accuracy	H	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £position in the important of th	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 40.1-500 Hz 0 at 501-1000 Hz and CF<1.5 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2
Current (r.m.s)	Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H	0.0-42 ± (0.2% of reading 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £\text{PCMING of reading + 5 counts}} *Current (peak) ≤ 27.6 A 0.0 A~38.0 A ± (1% of reading + 5 counts) ± (1.5% of reading + 10 counts) 0.0 W~120.0 W 100 W~1300 W ± (2% of reading +15 counts) ± (2% of reading +30 counts)	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 40.0-70.0 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5
Current (r.m.s)	Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £position in the important of th	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A 0.0 A~76.0 A bunts) at 40.0-70.0 Hz counts) at 70.1-500 Hz unts) at 40.0-70.0 Hz counts) at 501-1000 Hz and CF<1.5 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.2
Current (r.m.s) Current (peak)	Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz \$perifical reading + 5 counts at 40.0-500 Hz ± (1% of reading + 10 counts at 40.0-500 Hz ± (1% of reading + 10 counts at 40.0-500 Hz ± (1% of reading + 10 counts at 40.0-500 Hz ± (1% of reading + 15 counts) at 40.0-500 Hz ± (2% of reading + 30 counts) at 40.0-500 Hz ± (2% of reading + 5 counts) at 40.0-500 Hz ± (2% of	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A 0.0 A~76.0 A bunts) at 40.0-70.0 Hz counts) at 70.1-500 Hz 0) at 501-1000 Hz and CF<1.5 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5
Current (r.m.s) Current (peak)	Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H	0.0-42 ± (0.2% of readi 0.005 A~1.200 A 1.00 A~13.00 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) ≤ 3.6 A ± (1% of reading + 5 counts) at 40.0-500 Hz £pconcentral reliable before the before the counts of the	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A 0.0 A~76.0 A bunts) at 40.0-70.0 Hz counts) at 70.1-500 Hz 0) at 501-1000 Hz and CF<1.5 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 000
Current (r.m.s) Current (peak)	Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H	### 0.042 ± (0.2% of reading	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (1% of reading +5 counts) at 501-1000 Hz and CF<1.5 *Current (peak) ≤ 55.2 A 0.0 A~76.0 A punts) at 40.0-70.0 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 ooo yed to three significant digits
Current (r.m.s) Current (peak)	Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H L	### (0.2% of reading ± (0.00 A~13.00 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) ≤ 3.6 A ± (1% of reading ± 5 counts) at 40.0-500 Hz \$\frac{1}{2}\$\$1	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A Dunts) at 40.0-70.0 Hz counts) at 70.1-500 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 output description:
Current (r.m.s) Current (peak)	Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range	H L H	### (0.2% of reading ± (1.00 A~13.00 A) ###################################	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A Dounts) at 40.0-70.0 Hz counts) at 70.1-500 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 output 0.0 VA~240.0 VA doubted three significant digits 0.0 VA~240.0 VA 200 VA~2600 VA
Current (r.m.s) Current (peak) Power Factor	Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy	H L H L H	### (0.2% of reading ± (0.00 A~13.00 A) ###################################	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A bunts) at 40.0-70.0 Hz counts) at 70.1-500 Hz counts) at 70.1-500 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 out 501-1000 Hz and PF>=0.5 out 501-1000 Hz and PF>=0.5 out 40.0-500 Hz and PF>=0.5 out 501-1000 Hz and PF>=0.5 out 600-500 Hz and PF>=0.5 out 6
Voltage Current	Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range	H L H L	### (0.2% of reading ± (1.00 A~13.00 A) ###################################	0.0 V ng + 3 counts) 0.005 A~2.400 A 2.00 A~26.00 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 ± (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 0.0 A~76.0 A Dounts) at 40.0-70.0 Hz counts) at 70.1-500 Hz counts) at 70.1-500 Hz 0.0 W~240.0 W 200 W~2600 W at 40.0-500 Hz and PF>=0.2 at 501-1000 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 at 40.0-500 Hz and PF>=0.5 ooo yed to three significant digits 0.0 VA~240.0 VA 200 VA~2600 VA

	ly-phase mode (1Ø3W) for r phase measurement		430XAC	460XAC	
Crest Factor	Range		0-10	0.00	
	Accuracy		0-10.00 Ap / A ,Calculated and displayed to two significant digits		
Poly-phase mode (1Ø3W) for L1-L2 measurement			430XAC	460XAC	
Frequency	Range		0.0-100	00 0 Hz	
,,	Accuracy		0.0-1000.0 Hz ± 0.1 Hz (501-1000 Hz Acurracy ± 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		
	rango	Н	(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	± (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	
		н	± (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 Accuracy	,	N/A		
Power	Range	L	L1 Power +	- L2 Power	
	90	Н	L1 Power +		
	Accuracy	L	L1 Power + L2 Power	er, Calculated value	
Power Factor	Range		0 - 1	.000	
	Accuracy		(L1 P + L2 P) / (L1 VA + L2 VA) ,Calculated and displayed to three significant digits		
Power Apparent	Range	L	L1 VA +	- L2 VA	
(VA)	i tango	Н	L1 VA +	- L2 VA	
	Accuracy	L H	L1 VA + L2 VA ,0	Calculated value	
Power	Range	L	L1 VAR + L2 VAR		
Reactive (Q)	H		L1 + VAR + L2 VAR		
	Accuracy	L H	L1 VAR + L2 VAR ,Calculated value		
Crest Factor	Range Accuracy		N/	'A	
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		
	pple and Noise (p-p)		< 4.0	V p-p	
	DC SETTINGS				
Voltage	Range		0-210 V / 0-420 V Selectable		
	Accuracy		± (0.2% of sett	-	
Current Hi Limit (OC Fold=OFF)	5 V-210 \		14.40 A	0.10 - 28.80 A	
OC Fold Back	5 V-420 \		7.20 A 0.10 - 14.40 A		
(OC Fold = ON)	Fold = ON) 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		1.0~999.9 s		
` '	Accuracy		± (0.1% + 0.05 sec)		
Delay Timer	Range		0.5 s~9		
			0.1 m~9 0.1 h~9		
	Accuracy		0.1 h~999.9 h ± (0.1% + 0.1 sec)		
Dwell Timer	Accuracy Range		0, 0.5 s~999.9 h	•	
			± (0.1% +		
	Accuracy		± (U.1% +	0.1 360)	

DC MEASUREMENT		430XAC	460XAC	
Voltage	Range	0.0-420.0 V		
	Accuracy	±(0.2% of sett	ing + 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 ful	I rated current>1 second	
Hardware OFL		The single unit Hardware OFL:Over Current 105 ~110%		
Outnot Shout S	hut Davin Sugad	from off state with 110% kg		
Software OPP	hut Down Speed	<1 second		
Joitware OPP		When over Power 100 ~ 110% of full power >5 second. When over Power >110% of full power <1 second.		
Software OTP		Temperature over 110 degree C on the power amp and PFC heatsink		
Software OVP		Output voltage range: 0~150 V, maximum voltage deviation +5 V		
		Output voltage range: 0~300 V maximum voltage deviation +10 V		
Software LVP		When output maximum voltage deviation -10 V >1 second.		
General				
Transient (only	y 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 Outpu	t 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 Displa	ly	240 x 64 dot resolution Monographic LCD /Contrast 9 Levels 1-9		
PFC PF ≥ 0.97 at Full load				
Effieciency			,	
Auto Loop cyc			• •	
Over Current F	fold Back	On/Off, Setting On when output current over setting Hi-A value setting Hi-A value, Re:		
Safety		С	E	
Dimension		430(W) x 400.5(H) x 500(D) mm	
Weight		105.8 lbs (48 kg)	125.6 lbs (57 kg)	
Operation Env	iroment	0-40°/20-80% RH		

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