# **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

**GPIB** Interface

Ethernet Interface





			430XAC	460XAC	
Phase	IPUT		1Ø	1Ø or 3Ø	
Voltage			200 - 240 VAC	1Ø : 200~240 VAC ± 10% 3Ø3W : 200~240 VAC ± 10%	
Frequency	quency		3Ø4W : 346~416 VAC ± 10% 47 - 63 Hz		
Frequency AC OUTPUT			4.	/ - 03 HZ	
	-	(72)//	3000 VA	6000 VA	
		IØ2W			
Power Rating	1Ø3W 3Ø4W		Total 2000 VA (1000 VA per phase) Total 3000 VA (1000 VA per phase)	Total 4000 VA (2000 VA per phase)	
	DC		3000 VA	Total 6000 VA (2000 VA per phase) 6000 VA	
		5- 150 V	27.6 A @ <110 V	55.2 A @ ≤110 V	
	1Ø2W	5 - 300 V	13.8 A @ ≤220 V	27.6 A @ <220 V	
		5 - 150 V	9.2 A @ ≤110 V for per phase	18.4 A @ ≤110 V for per phase	
Max. Current (RMS)	1Ø3W	5 - 300 V	4.6 A @ ≤220 V for per phase	9.2 A @ ≤220 V for per phase	
		5 - 150 V	9.2 A @ ≤110 V for per phase	18.4 A @ ≤110 V for per phase	
	3Ø4W	5 - 300 V	4.6 A @ ≤220 V for per phase	9.2 A @ ≤220 V for per phase	
		5 - 150 V	110.4 A	220.8 A	
Inrush Current	1Ø2W	5 - 300 V	55.2 A	110.4 A	
		5 - 150 V	36.8 A for per phase	73.6 A for per phase	
(peak)	1Ø3W	5 - 300 V	18.4 A for per phase	36.8 A for per phase	
		5 - 150 V	36.8 A for per phase	73.6 A for per phase	
	3Ø4W	5 - 300 V	18.4 A for per phase	36.8 A for per phase	
Phase			1Ø2W, 1Ø3W, 3	3Ø4W, provided option	
THD (Total Harmor	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 with	in the 80~140 VAC at Low Range or the 160~280 VAC at High Range.	
Crest Factor				>3	
Line Regulation				± 0.1 V	
Load Regul				istive Load, <400 μS response time	
Load Regu	lation (Soft	ware)	± 0.2 V, <1 S response time		
DC offset			≥	≤ ± 5 mV	
		J	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		
requercy	Accuracy				
	Accuracy	/	± 0.03	3% of setting	
Starting & Ending	Range		± 0.03	0~359°	
Starting & Ending Phase Angle			± 0.03		
	Range	/	± 0.03	0~359°	
	Range Accuracy	/	± 0.03 ±1°(	0~359° (45~65 HZ)	
Phase Angle	Range Accuracy 5V~150 \	/ / / /	± 0.03 ± 1°( 0.01~9.20 A 0.01~4.60 A	0~359° (45~65 HZ) 0.01~18.40 A	
Phase Angle	Range Accuracy 5V~150 V 5V~300 V Accuracy	/ / / /	± 0.03 ± 1.03 ±1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s	0~359° (45~65 HZ) 0.01~18.40 A 0.01~9.20 A	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up	Range Accuracy 5V~150 V 5V~300 V Accuracy	/ / / /	± 0.03 ± 1.03 ±1°( 0.01~9.20 A 0.01~4.60 A ± (2.0% of s	0-359° (45~65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts)	
Phase Angle Current Hi Limit OC Fold Back Resp	Range Accuracy 5V~150 V 5V~300 V Accuracy	/ / / 2	± 0.03 ± 0.03 ±1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down	Range Accuracy 5V~150 V 5V~300 V Accuracy ponse Time Range	/ / / 2	± 0.03 ± 0.03 ±1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s 0.0 ± (0.1%)	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second)	Range Accuracy 5V~150 V 5V~300 V Accuracy conse Time Range Accuracy	/	± 0.03 ± 0.03 ±1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s 0.01 ± (0.15 0.01	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down	Range Accuracy 5V-150 V 5V-300 V Accuracy conse Time Range Accuracy Range	/	$\pm 0.03$ $\pm 100$ $\pm 1^{\circ}($ 0.01-9.20 A 0.01-4.60 A $\pm (2.0\% \text{ of s}$ 0.0 $\pm (0.1\% - 0.0)$ $\pm (0.1\% - 0.0)$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second)	Range Accuracy 5V-150 V 5V-300 V Accuracy conse Time Range Accuracy Range	/	± 0.03 ± 0.03 ± 1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s (0.05 ± (0.15) 0.01 ± (0.15) 0.01 ± (0.17) 0.1 m 0.1 m 0.1 m	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s % + 0.05 sec)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second)	Range Accuracy 5V-150 \ 5V-300 \ Accuracy conse Time Range Accuracy Range Accuracy Range	/	$\pm 0.03$ $\pm 100$ $\pm 1^{\circ}($ 0.01-9.20 A 0.01-4.60 A $\pm (2.0\% \text{ of s})$ 0.01 $\pm (0.19)$ 0.01 $\pm (0.19)$ 0.1 m 0.1 m 0.1 m 0.1 m 0.1 m	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s=999.9 s n-999.9 min h=999.9 h	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer	Range Accuracy 5V-150 V 5V-300 V Accuracy Range Accuracy Range Accuracy Range		$\pm 0.03$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm (2.0\% \text{ of s})$ $\pm (2.0\% \text{ of s})$ $\pm (0.15)$ $\pm (0.15)$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s -999.9 min h~999.9 h 1% + 0.1 sec)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer Poly-phase mode	Range       Accuracy       5V-150 \       5V-300 \       Accuracy       conse Time       Range       Accuracy       Range       Accuracy		$\pm 0.03$ $\pm 10.03$ $\pm 1^{\circ}($ 0.01-9.20 A 0.01-4.60 A $\pm (2.0\% of s)$ $\pm (2.0\% of s)$ 0.0 $\pm (0.15)$ 0.0 $\pm (0.15)$ 0.1 m 0.1 m 0.1 m 0.1 s-999.9 $\pm (0.15)$ $\pm (0.15)$ 0.1 s-999.9 $\pm (0.15)$ $\pm (0.15)$ $\pm (0.15)$ $\pm (0.15)$ 0.1 s-999.9 $\pm (0.15)$ $\pm (0.15)$ 0.1 s-999.9 $\pm (0.15)$	0-359° (45-65 HZ) 0.01-18.40 A 0.01-9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) 8-999.9 s 1-999.9 min h-999.9 h 1% + 0.1 sec) % + 0.1 sec)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer	Range       Accuracy       5V-150 \       5V-300 \       Accuracy       conse Time       Range       Accuracy       Range       Accuracy		$\begin{array}{c} \pm 0.03 \\ & \pm 0.03 \\ & & \pm 1^{\circ}( \\ \hline \\ 0.01-9.20 \ A \\ \hline \\ 0.01-4.60 \ A \\ & \pm (2.0\% \ of s \\ \hline \\ 1 \\ (0.13 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) 0-999.9 s \$-999.9 s \$-999.9 s \$-999.9 s \$-999.9 h \$+ 0.1 sec) 0+ (0=continuous) 1% + 0.1 sec) 460XAC	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer Poly-phase mode	Range       Accuracy       5V-150 \       5V-300 \       Accuracy       conse Time       Range       Accuracy       Range       Accuracy		$\begin{array}{c} \pm 0.03 \\ & \pm 0.03 \\ & & \pm 1^{\circ}( \\ \hline \\ 0.01-9.20 \ A \\ \hline \\ 0.01-4.60 \ A \\ & \pm (2.0\% \ of s \\ \hline \\ 1 \\ (0.13 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0.1 \\ \hline \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0.1 \\ \hline \\ 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) 8-999.9 s 1-999.9 min h~999.9 h 1% + 0.1 sec) % + 0.1 sec)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer Poly-phase mode measurement	Range Accuracy 5V-150 V 5V-300 V Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Range Accuracy Range Range	/ /	$\pm 0.03$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 10^{2}$ $0.01-9.20 A$ $0.01-4.60 A$ $\pm (2.0\% \text{ of s})$ $0.0$ $\pm (0.19)$ $0.0$ $\pm (0.19)$ $0.1 \text{ m}$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s % + 0.05 sec) 8-999.9 h 1% + 0.1 sec) % + 0.1 sec) 460XAC 0-1000 Hz 0.1 Hz	
Phase Angle  Current Hi Limit  OC Fold Back Resp Ramp-Up Timer (second)  Ramp-Down Timer (second)  Delay Timer  Dwell Timer  Poly-phase mode measurement  Frequency	Range Accuracy 5V-150 \ 5V-300 \ Accuracy Nonse Time Range Accuracy Range Accuracy Range Accuracy Range (304W) for Range	/ /	$\pm 0.03$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $0.01-9.20 A$ $\pm (2.0\% of s)$ $\pm (2.0\% of s)$ $\pm (0.15)$ $0.0$ $\pm (0.15)$ $0.1$ $\pm (0.17)$ $0.1$ $\pm (0.17)$ $0.1$ $\pm (0.18)$ $0.1 + \pm (0.18)$ $\pm (0.18)$	0-359° (45-65 HZ) 0.01-18.40 A 0.01-9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s n-999.9 min h-999.9 h % + 0.1 sec) Ph (0=continuous) % + 0.1 sec) Ph (0=continuous) % + 0.1 sec) 1% + 0.1 sec) 0.00 Hz 0.1 Hz 00 Hz Accuracy ± 0.2 Hz)	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer Poly-phase mode measurement	Range Accuracy 5V-300 V Accuracy Nange Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range	<pre>/ /</pre>	$\pm 0.03$ $\pm 100$ $\pm 100$ $\pm 100$ $\pm 100$ $0.01-9.20 A$ $\pm (2.0\% of s)$ $\pm (2.0\% of s)$ $\pm (0.15)$ $0.0$ $\pm (0.15)$ $0.1$ $\pm (0.17)$ $0.1$ $\pm (0.17)$ $0.1$ $\pm (0.18)$ $0.1 + \pm (0.18)$ $\pm (0.18)$	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s -999.9 min h-999.9 h % + 0.1 sec) % + 0.1 sec) % + 0.1 sec) 460XAC 0.1 Hz 0.1 Hz 00 Hz Accuracy ± 0.2 Hz) 0-420.0 V	
Phase Angle Current Hi Limit OC Fold Back Resp Ramp-Up Timer (second) Ramp-Down Timer (second) Delay Timer Dwell Timer Poly-phase mode measurement Frequency	Range Accuracy 5V-150 V Sonse Time Range Accuracy Range Accuracy Range Accuracy Range Accuracy Range Range Range Range Accuracy Range	A state of the	± 0.03 ± 0.03 ± 1°( 0.01-9.20 A 0.01-4.60 A ± (2.0% of s 0.0 ± (0.15 0.0 ± (0.15 0.1 0.1 0.1 0.1 ± (0.1 0.1 0.1 ± (0.1 0.1 0.1 ± (0.1 0.1 ± (0.1 0.1 0.1 ± (0.1 0.1 0.1 0.1 ± (0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	0-359° (45-65 HZ) 0.01~18.40 A 0.01~9.20 A setting + 2 counts) <1.4 s 0-999.9 s % + 0.05 sec) 0-999.9 s % + 0.05 sec) s-999.9 s n-999.9 min h-999.9 h % + 0.1 sec) Ph (0=continuous) % + 0.1 sec) 2h (0=continuous) % + 0.1 sec) 100 Hz 0.1 Hz 00 Hz Accuracy ± 0.2 Hz)	

Poly-phase mode	e (3Ø4W) for p	per phase measurement	430XAC	460XAC	
Current (RMS)	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	
	Accuracy		± (1% of reading +5 counts) at 40.0-500 Hz	$\pm$ (1% of reading +5 counts) at 40.0-500 Hz	
		L	± (1% of reading +5 counts) at 501-1000 Hz, CF <1.5 and Current (peak) ≤3.6 A	± (1% of reading +5 counts) at 501-1000 Hz, CF <1.5 and 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	
		Н	± (1% of reading +5 counts) at 501-1000 Hz, CF <1.5 and Current (peak) ≤27.6 A	± (1% of reading +5 counts) at 501-1000 Hz, CF < 1.5 and Current (peak) ≤55.2 A	
	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		
Current (peak)			± (1.5% of reading + 10 counts) at 70.1 - 500 Hz		
			$\pm$ (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	
Power	5	Н	100 W~1300 W	200 W~2600 W	
	Accuracy		± (2% of reading +15 counts) at 40.		
		L	$\pm$ (2% of reading +30 counts) at 40. $\pm$ (2% of reading +30 counts) at 501		
			± (2% of reading +5 counts) at 40.0		
		Н		$\pm$ (2% of reading +5 counts) at 40.0-500 Hz and PF $\ge$ 0.2 $\pm$ (2% of reading +15 counts) at 501-1000 Hz and PF $\ge$ 0.5	
Power Factor	Range	1	0 - 1.000		
	Accuracy		W / VA, Calculated and displayed to	three significant digits	
Power Apparent	Range	L	0.0 VA~120.0 VA	0.0 VA~240.0 VA	
VA)	Kange	Н	0.0 VA~120.0 VA		
	Accuracy	n	100 VA~1300 VA V×A, Calculated v	200 VA~2600 VA	
Power	Accuracy				
Power Reactive (Q)	Range	L	0.0 VAR ~ ± 120.0 VAR	0.0 VAR ~ ± 240.0 VAR	
	A	H	0 VAR ~ ± 1300 VAR	0 VAR ~ ± 2600 VAR	
	Accuracy		√(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		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 F		(A+B+C)/√3, Calculated and displayed	0 0	
Current (RMS)	Range		0.005A~1.200A	0.005A~2.400A	
		L			
		H	1.00A~13.00A	2.00A~26.00A	
	Calculated			2.00A~26.00A	
	Calculated Formula	Н	1.00A~13.00A $\frac{\sum VA}{\sum V} / \sqrt{3}$	2.00A~26.00A	
Power		H		2.00A~26.00A 0.0W~720.0W	
Power	Formula	H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$		
Power	Formula	H L H L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W	0.0W~720.0W 600W~7800W	
Power	Formula Range	H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W	0.0W~720.0W 600W~7800W	
	Formula Range	H L H L H L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W	0.0W~720.0W 600W~7800W	
	Formula Range Accuracy	H L H L H L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum P}{\sum V}$ A Power + B Power + C Power,	0.0W~720.0W 600W~7800W	
	Formula Range Accuracy Range	H L H L H L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum P}{\sum V}$ A Power + B Power + C Power, 0 - 1.000	0.0W~720.0W 600W~7800W Calculated value	
Power Factor	Formula Range Accuracy Range Resolution	H L H L H L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001	0.0W~720.0W 600W~7800W Calculated value	
Power Factor	Formula Range Accuracy Range Resolution Accuracy	H L H L L L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum P}{\sum VA}$ A Power + B Power + C Power, 0 - 1.000 0.001 Calculated and displayed to t	0.0W~720.0W 600W~7800W Calculated value :hree significant digits	
Power Factor	Formula Range Accuracy Range Resolution Accuracy	H L H L L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum P}{\sum VA} A \text{ Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA~360.0VA 300VA~3900VA	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA	
Power Factor	Formula Range Accuracy Range Resolution Accuracy Range	H L H L L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA~360.0VA	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA	
Power Factor Power Apparent (VA)	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula	H L H L H L H H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ $0.0W-360.0W$ $300W-3900W$ $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ $0 - 1.000$ $0.001$ $Calculated and displayed to t$ $0.0VA-360.0VA$ $300VA-3900VA$ $\sqrt{(\sum^{W})^{2} + (\sum^{Q})^{2}}$	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA 600VA~7800VA	
Power Factor Power Apparent (VA) Power	Formula Range Accuracy Range Resolution Accuracy Range Calculated	H L H L H L H L L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA~360.0VA 300VA~3900VA $\sqrt{(\sum^{W})^{2} + (\sum^{Q})^{2}}$ 0.0VAR~360.0VAR	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA 600VA~7800VA	
Power Factor Power Apparent (VA) Power	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range	H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ $0.0W-360.0W$ $300W-3900W$ $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ $0 - 1.000$ $0.001$ $Calculated and displayed to t$ $0.0VA-360.0VA$ $300VA-3900VA$ $\sqrt{(\sum^{W})^{2} + (\sum^{Q})^{2}}$	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA 600VA~7800VA	
Power Factor Power Apparent (VA) Power	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula	H L H L H L H L H L H L H L L	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum^{P}}{\sum^{VA}} \qquad \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA~360.0VA 300VA~3900VA $\sqrt{(\sum^{W})^{2} + (\sum^{Q})^{2}}$ 0.0VAR~360.0VAR	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA 600VA~7800VA 0.0VAR~720.0VAR 600VAR~7800VAR	
Power Factor Power Apparent (VA) Power Reactive (Q)	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	H L H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W-360.0W 300W-3900W $\frac{\sum P}{\sum VA} \qquad \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA-360.0VA 300VA-3900VA $\sqrt{(\sum W)^2 + (\sum Q)^2}$ 0.0VAR-360.0VAR 300VAR-3900VAR A VAR + B VAR + C VAR, Calculated and A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, Calculated A VAR + C VAR, Calculated A VAR + C VAR + C VAR, Calculated A VAR + C VAR + C VAR + C VAR + C VAR +	0.0W~720.0W 600W~7800W Calculated value three significant digits 0.0VA~720.0VA 600VA~7800VA 0.0VAR~720.0VAR 600VAR~7800VAR lculated value	
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase mo	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	H L H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W~360.0W 300W~3900W $\frac{\sum P}{\sum VA}  \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA~360.0VA 300VA~3900VA $\sqrt{(\sum W)^2 + (\sum Q)^2}$ 0.0VAR~360.0VA 300VAR~3900VA A VAR + B VAR + C VAR, Calculated A VAR + B VAR + C VAR, C	0.0W-720.0W 600W-7800W Calculated value chree significant digits 0.0VA-720.0VA 600VA-7800VA 600VAR-7800VA 600VAR-7800VAR 600VAR-7800VAR 600VAR-7800VAR	
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase mo	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy de (102W) Se Range	H L H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W-360.0W 300W-3900W $\frac{\sum P}{\sum VA}$ A Power + B Power + C Power, 0 - 1.000 0.001 Calculated and displayed to t 0.0VA-360.0VA 300VA-3900VA $\sqrt{(\Sigma^W)^2 + (\Sigma^Q)^2}$ 0.0VAR-360.0VAR 300VAR-3900VAR A VAR + B VAR + C VAR, Ca 430XAC 5.0~300 VAC, 150/300 V	0.0W-720.0W 600W-7800W Calculated value chree significant digits 0.0VA-720.0VA 600VA-7800VA 600VAR-7800VA 600VAR-7800VAR 600VAR-7800VAR 600VAR-7800VAR	
Power Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase mo Voltage	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy de (102W) Se Range Range Range	H L H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W-360.0W 300W-3900W $\frac{\sum P}{\sum VA}  \text{A Power + B Power + C Power,}$ 0 - 1.000 0.001 Calculated and displayed to t 0.0VA-360.0VA 300VA-3900VA $\sqrt{(\sum V)^2 + (\sum Q)^2}$ 0.0VAR-360.0VAR 300VAR-3900VAR A VAR + B VAR + C VAR, Ca 430XAC 5.0~300 VAC, 150/300 V 0.1 V	0.0W-720.0W 600W-7800W Calculated value chree significant digits 0.0VA~720.0VA 600VA~7800VA 600VA~7800VA convAr-7800VAR lculated value 460XAC Auto Range	
'ower Factor 'ower Apparent (VA) 'ower leactive (Q) <b>ingle-phase mo</b>	Formula Range Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy de (102W) Se Range	H L H L H L H L H L H L H L H	$\frac{\sum VA}{\sum V} / \sqrt{3}$ 0.0W-360.0W 300W-3900W $\frac{\sum P}{\sum VA}$ A Power + B Power + C Power, 0 - 1.000 0.001 Calculated and displayed to t 0.0VA-360.0VA 300VA-3900VA $\sqrt{(\Sigma^W)^2 + (\Sigma^Q)^2}$ 0.0VAR-360.0VAR 300VAR-3900VAR A VAR + B VAR + C VAR, Ca 430XAC 5.0~300 VAC, 150/300 V	0.0W~720.0W 600W~7800W Calculated value chree significant digits 0.0VA~720.0VA 600VA~7800VA 600VA~7800VA covVAR~7800VAR lculated value 460XAC Auto Range	

Single-phase mo	ode (1Ø2W	) Setting	430XAC	460XAC	
Frequency	ncy 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	Range		0~359°		
Phase Angle	Resolution		1°		
	Accuracy		± 1°(45~65 HZ)		
	5V~150V		0.01~27.60 A	0.01~55.20 A	
Current Hi Limit	5V~300V		0.01~13.80 A		
Current in Linnt				0.01~27.60 A	
	Accuracy		± (2.0% of setting + 2 counts)		
OC Fold Back Resp			< 1.4 s		
Single-phase m	ode (102vv	) 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	
- in the second			± (1% of reading + 5 counts) a		
	Accuracy		± (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 v	alue	
Power	Range		0 VAR~3900 VAR	0 VAR~7800 VAR	
Reactive (Q)	Accuracy		√(VA)2 - (W)2, Calculated value		
Crest Factor			(VA)2 - (VV)2, Calculated value		
Crest Factor	Range				
	Accuracy		Ap / A, Calculated and displayed to	two significant digits	
Poly-phase mod setting	le (1Ø3W) f		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 setti	ng	
Starting & Ending	Range		0~359°		
Phase Angle	Accuracy		± 1°(45~65 HZ	)	
	-				
	5V~150V		0.01~9.20 A	0.01~18.40 A	
Current RI Limit	5V~300V		0.01~4.60 A	0.01~9.20 A	
	Accuracy		± (2.0% of setting + 2 counts)		
OC Fold Back Resp	Back Response Time		<1.4 s		
Poly-phase mod ment	le (1Ø3W) f		430XAC	460XAC	
	Range		0.0-1000 Hz		
Frequency	Accuracy		± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)		
	Range		0.0-420.0 V		
Voltage	Accuracy		± (0.2% of reading + 3	counts)	
		L	0.005 A~1.200 A	0.005 A~2.400 A	
	Range				
		Н	1.00 A~13.00 A	2.00 A~26.00 A	
Current (RMS)		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	
	Accuracy -	н	± (1% of reading + 5counts) at 40.0-500 Hz ± (1% of reading +5 counts) at 501-1000 Hz,	± (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	CF <1.5 and Current (peak) ≤55.2 A	

	Poly-phase mode (1Ø3W) for per phase measurement		430XAC	460XAC		
	Range		0.0 A~38.0 A	0.0 A-76.0 A		
Current (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			
	Panga	L	0.0 W~120.0 W	0.0 W~240.0 W		
	Range	Н	100 W~1300 W	200 W~2600 W		
Power		L		nts) at 40.0-500 Hz and PF ≥0.2 orts) at 501-1000 Hz and PF ≥0.5		
	Accuracy	Н	± (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			
1 Ower 1 actor	Accuracy		W / VA, Calculated and displayed to three significant digits			
		L	0.0 VA~120.0 VA 0.0 VA~240.0 VA			
Power Apparent (VA)	Range	Н	100 VA~1300 VA	200 VA~2600 VA		
Apparent (VA)	Accuracy		VxA, Cal	culated value		
		L	0.0 VAR~120.0 VAR	0.0 VAR~240.0 VAR		
Power Reactive (Q)	Range	Н	0 VAR~1300 VAR	0 VAR~2600 VAR		
			(VA)2 - (W)2, Calculated value			
Croct Factor	Accuracy		V			
Crest Factor			0-10.00			
	Accuracy		Ap / A, Calculated and dis	played to two significant digits		
Poly-phase moo measurement	de (1Ø3W) f	or L1-L2	430XAC	460XAC		
Frequency	Range		0.0-1	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		
current (kino)	Range	н	1.00A~13.00A	2.00~26.00A		
	Calculated L Formula H		$\frac{\Sigma^{VA}}{\Sigma^{V}}$			
Power	Range	L	0.0W~240.0W	0.0W~480.0W		
		н	200W~2600W	400W~5200W		
	Accuracy L H		L1 Power + L2 Power, Calculated value			
Power Factor	Range		0.1000			
Tower ractor	Calculated F			0 - 1.000		
				ted and displayed to three significant digits		
Power Apparent (VA)	Range	L	0.0W~240.0VA	0.0W~480.0VA		
		Н	200W~2600VA	± 400W~5200VA		
	Calculated Formula	L	$\sqrt{(\sum^W)^2 + (\sum^Q)^2}$	Calculated value		
	- Official	Н				
Power Reactive (Q)	Range	L	0.0VAR ~ ± 240.0VAR	0.0VAR ~ ± 480.0VAR		
		Н	± 200VAR ~ ± 2600VAR	± 400VAR ~ ± 5200VAR		
	Calculated L Formula H		L1 VAR + L2 VAR, Calculated value			
DC OUTPUT						
Max. Power			3000 W	6000 W		
Max. Current	0-210 V		14.4 A	28.8 A		
and our out			7.2 A	14.4 A		
Disals 141 1	0-420 V					
Ripple and Noise (	RIVIS)		Range: 5-210 V <700 mV			
			Range: 5-420 V <1100 mV			
Ripple and Noise (			<4.0 Vp-p			
DC SETTINGS	5					
Voltage	Range		5-210 V / 5	420 V Selectable		
	Accuracy		± (0.2% of se	etting + 3 counts)		
	5 V-210 V		14.40 A	0.10 - 28.80 A		
Current Hi Limit	5 V-420 V		7.20 A	0.10 - 14.40 A		
	Accuracy			etting + 2 counts)		
OC Fold Back Poor	-					
OC FOID Back Resp	C Fold Back Response Time		<1.4 s			

DC MEASURE	EMENT	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 rea	ding +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 Sh	nut Down Speed	<1 second		
Software OPP		When over Power 105 ~ 1	10% 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		When output frequency < 100Hz, maximum voltage deviation + 5V		
	L		Hz, maximum voltage deviation + 15V	
			Hz, maximum voltage deviation + 20V	
	н		z, maximum voltage deviation + 10V Hz, maximum voltage deviation + 30V	
			Hz, maximum voltage deviation + 40V	
Software LVP		When output frequency < 100Hz, maximum voltage deviation -5V > 0.5 second		
	L	When output frequency 101-500Hz, ma	ximum voltage deviation -15V > 0.5 second	
		When output frequency 501-1000Hz, maximum voltage deviation -20V > 0.5 second		
		When output frequency < 100Hz, maximum voltage deviation -10V > 0.5 second		
	Н	When output frequency 101-500Hz, maximum voltage deviation $-30V > 0.5$ second		
Reverse Current	t Protection (RCP)	When output frequency 501-1000Hz, maximum voltage deviation -40V > 0.5 second Over 75W		
GENERAL				
Transient (only for	or 40-70 Hz)	Trans Volt 0.0.30	0.0 V Resolution 0.1 V	
Inansient (only h	01 40 70 112)	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 1		
		Trans-Cycle 0-9999, 0-Constant		
Operation Key F	eature	Soft key, Numeric key, Rotary Knob		
Remote Input Si	ignal	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 S	etting	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		
PFC		PF ≥0.92	7 at Full load	
PFC Efficiency			7 at Full load at Full load)	
	9	≥78% (		
Efficiency		≥78% ( 0 = Continuc On/Off, Setting On when output current over setting Hi-A valu	at Full load)	
Efficiency Auto Loop cycle		≥78% ( 0 = Continue On/Off, Setting On when output current over setting Hi-A valu setting Hi-A value, f	at Full load) bus, OFF, 2~9999 e it will fold back output voltage to keep constant output current is	
Efficiency Auto Loop cycle Over Current Fc	bld Back	≥78% ( 0 = Continue On/Off, Setting On when output current over setting Hi-A value setting Hi-A value, f CE	at Full load) ous, OFF, 2-9999 e it will fold back output voltage to keep constant output current is Response time <1400ms	
Efficiency Auto Loop cycle Over Current Fo Safety Agency	bld Back	≥78% ( 0 = Continue On/Off, Setting On when output current over setting Hi-A valu setting Hi-A value, f CE 430 x 400	at Full load) ous, OFF, 2~9999 e it will fold back output voltage to keep constant output current is Response time <1400ms Listed	
Efficiency Auto Loop cycle Over Current Fo Safety Agency	bld Back	≥78% ( 0 = Continue On/Off, Setting On when output current over setting Hi-A valu setting Hi-A value, f CE 430 x 400	at Full load) bus, OFF, 2~9999 e it will fold back output voltage to keep constant output current is Response time <1400ms Listed D.5 x 500 mm	

Specifications subject to change