

# **AC Power Sources**

# Manual • Automated • Modular • Programmable



# **Power Redefined**

# **Power Redefined**

Our Power Sources are designed and supported in the USA. We're factory direct, so you'll never have to deal with a middle man. Our highly trained sales staff focuses on every customer no matter the size of the order. From our industry-leading warranty to our return and repair policies, we have redefined how the power source industry does business. When you compare our dedicated people and extensive support programs, to our competitors, you'll be sure to choose APT.

# CHANGING the way the **POWER SOURCE INDUSTRY** DOES BUSINESS

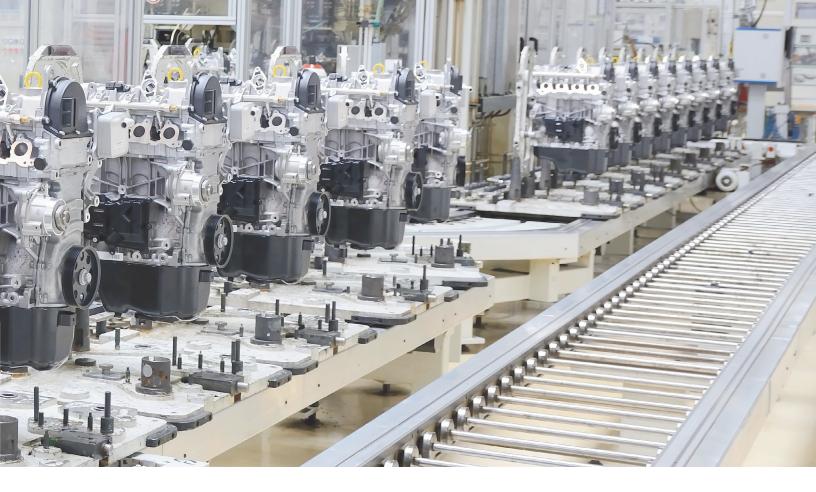
When you choose APT, you're choosing a partner that will continue to assist you throughout the life of your product, no matter what the application.

# UNPARALLELED SERVICE & SUPPORT

TRADE-IN & TRADE-UP

No competitor can match our dedication to service and support. With 1 business day shipping on all models and 5 business day turnaround on all repairs, APT keeps your business up and running with minimal down-time.

We are proud to have a generous and responsible trade-in program. It is our little way of saying thanks for continuing to use our instruments. Simply send us your old instrument and we'll give you a credit towards your purchase. We accept any brand, make or model towards your trade-in discount of your new APT instrument.\* \*Offer only available in North America.



# **CUSTOMER HAPPINESS PROMISE**

We aim to provide an amazing experience and quality power sources that last a long time. If you're not satisfied with your power source, return it within 45 days for a full refund. Calibrate annually with us, or one of our authorized partners, and we'll extend your warranty an additional year for the service life of your power source, and at least five years after discontinuation. If it breaks during that time, we promise to fix it for free (unless abuse or excessive damage is present). When your power source reaches the end of its service life, we'll responsibly recycle it and give you a discount on a replacement.

\*Annual calibration and inspection must be made in each successive year starting one year after the original purchase date in order to remain eligible for extended warranty coverage beyond the standard warranty period (five years).

#### **5 YEAR WARRANTY**

Your new power source is warranted to be free from defects in workmanship and material for a period of (5) years from date of shipment.

\*\*5 year warranty is valid on any model purchased in 2021 or after.

#### **ONGOING SUPPORT**

We work to provide the best service and support in the industry. With decades of industry experience we are the pros you can trust to help you be compliant to NRTL standards. We'll work closely with you to help you achieve your goals. We've built a worldwide network of knowledg-able partners, so you're covered no matter where you are.







	Output Power Capability								Outpu	t Configur	ations	
Model	500 VA	1 kVA	2 kVA	3 kVA	4 kVA	6 kVA	8 kVA	12 kVA	18 kVA	1 Phase	Split 1 Phase (2 Lines/1 Neutral)	3 Phase
460XAC						٠				•	٠	•
8505	•									•		
8512			•							•		
8520				•						•		
8540						•				•		



# 1 Day Shipping

All APT power sources are shipped from our factory within 1 business day guaranteed. If your order ships late, we pay the freight.

	Outp	out Capabilities o	Gen	eral Feat	ures	
Model	Voltage Output Max	Frequency Output Range	Max A @ ≤110V/220V (per phase)	PC Control	CE Mark	Free GUI Available
460XAC	300/600/520*	40-1000	18.4A/9.2A	•	•	•
8505	310	5.0-1200	5.0A/2.5A	Progammable Mode Only	•	Progammable Mode Only
8512	310	5.0-1200	12.5A/6.25A	Progammable Mode Only	٠	Progammable Mode Only
8520	310	5.0-1200	20A/10A	Progammable Mode Only	٠	Progammable Mode Only
8540	310	5.0-1200	40A/20A	Progammable Mode Only	٠	Progammable Mode Only

x2 = the number of sources required to achieve an output rating.

x3 = the number of sources required to achieve an output rating and 3 phase.  $300/600/520^* = 300V$  phase 10, 600V split 10, 520V 30



### PowerTRAC<sup>™</sup> AC Power Source Control and Data Capture Software

Our PowerTRAC software takes the industry standard Power Source control software to the next level with data capture. Quickly export your test results to an Excel spreadsheet and improve traceabilty.

- Complete control from anywhere
- Real world simulation of voltage and frequency
- Visually see what your output and transients look like

#### **AVAILABLE AS A FREE DOWNLOAD!**

# 8500 Series

### Programmable AC Power Source



The APT 8500 Series is the most power dense and functionality rich source in APT history, giving you improved capability, functionality, and a reduced footprint in one series. These new models provide an output voltage of up to 310 VAC and an output frequency ranging from 5 Hz - 1,200 Hz, making it the obvious solution for all kinds of applications. Configure this power source as a simple bench top AC Power Source in Manual mode or, as an upgraded option, Programmable mode, to be used with an interface to a PC. The 8500 Series includes the following models: 8505, 8512, 8520, 8540

#### **Features**

- 14 pre-configured waveforms allow you to simulate nearly any abnormal condition on your DUT by simply selecting the waveform you would like to output.
- With expanded output voltage to 310VAC and output frequency from 5Hz to 1200Hz, the 8500 provides a single, simple solution to meet a wide variety of testing applications.
- Programmable mode option allows you to easily simulate voltage surges, voltage drops, voltage pulses, voltage sweeps, DC bias, and frequency sweeps to help make meeting the specific needs of your testing application easier than it has ever been.
- High power density with a reduced overall footprint offers you the flexibility you need to use your 8500 Series power source in either a bench top or rack mount application.
- Easily upgrade and keep your command set from your 6000, 7000, or 300XAC Series with the legacy program mode.

#### Standard

#### Options

- USB/RS-232 Interface
- Ethernet Interface
- Options
- ace GPIB Interface



### **Applicable Industries**



Integrator

#### **APT Benefits**



# Modes

INPUT	MANUAL MODE (STANDARD)	PROGRAMMABLE MODE (OPTION)
Manual Operation	•	•
PC Interface (USB/LAN standard, optional GPIB)		•
PowerTRAC Compatibility		•
Voltage, Frequency, Transient, and DC Bias Sweeps		•

# Specifications – 8500

INPUT			8505	8512	8520	8540			
Phase				1Ø2	2W				
Voltage				$100$ - $240$ V $\pm$ 10%		200 - 240 V $\pm$ 10%			
Max. Current			8A	18A	30A	30A			
Power Factor			≥0.93 at Full load		≥0.97 at Full load				
AC OUTPUT									
Power Rating		1Ø2W	500VA	1250VA	2000VA	4000VA			
Max. Current	1Ø2W	0 - 155V	5A @ 100V	12.5A @ 100V	20A @ 100V	40A @ 100V			
(RMS)	10200	0 - 310V	2.5A @ 200V	6.25A @ 200V	10A @ 200V	20A @ 200V			
Inrush Current	1Ø2W	0 - 155V	20A	50A	80A	160A			
(peak)		0 - 310V	10A	25A	40A	80A			
Frequency				5.0 - 12	200 Hz				
Phase				1Ø2	2W				
THD (Total Harm	nonic Dist	ortion)		≤0.3% @ 50/60Hz (F ≤1.1% @ 5 -1000Hz ( ≤1.2% @1001-1200Hz	(Full Resistive Load)				
Crest Factor				≥3					
Line Regulation			±0.1 V						
Load Regu	lation (H	ardware)	$\pm$ (1% of output +0.5V) @ Resistive Load, < 400 $\mu S$ response time						
Load Reg	ulation (S	oftware)	±0.2V, <1S response time						
DC offset			DC Offset ≤±30mV (typical)						
DC OUTPUT									
Power Rating			300W	750W	1200W	2400W			
Max. Current	0 - 210V		3.0A	7.5A	12.0A	24.0A			
Max. current	0 - 420V		1.5A	3.75A	12.0A	24.0A			
Ripple & Noise	Range	L		<700mV					
(rms)		Н		< 700mV					
Ripple & Noise (	р-р)			< 6.0Vp-p		< 7.0Vp-p			
SETTINGS			8505	8512	8520	8540			
Voltage (AC)	Range			0 - 310V, 155/31	0V Auto Range				
	Resolution	on		0.1	IV				
	Accuracy			±(0.2% of setting + 3 counts)±(0.2% of set6count					
Voltage (DC)	Range			0 - 420V, 210/42	0V Auto Range				
	Resolutio			0.1	IV	1			
	Accuracy	/		$\pm$ (0.2% of setting + 3counts)		±(0.2% of setting + 6counts)			
Frequency	Range			DC, 5 - 1200Hz Fu	ull Range Adjust				
	Resolution	on		0.1Hz at 0.0 - 999.9Hz,	1Hz at 1000 - 1200Hz				
	Accuracy	/		±0.03% of set					
Start Angle	Range			0~3					
	Resolution	on		10	0				

### Specifications – 8500 Series

SETTINGS			8505	8512	8520	8540			
Current Hi Limit	0 - 155V		0.05 - 5.00A	0.05 - 12.50A	0.05 - 20.00A	0.10 - 40.00A			
OC Fold=OFF)	(0 - 310V		0.05 - 2.50A	0.05 - 6.25A	0.05 - 10.00A	0.10 - 20.00A			
OC Fold Back	Resolution		0.01 A						
OC Fold = ON)	Accuracy		± (2.0% of setting + 4 counts)						
OC Fold Back Respo	onse Time		< 1.45						
Range			1.0 - 999.9H 1.0 - 999.9M 1.0 - 999.9s 0.1 - 999.9ms						
lime⁺	Resolution		0.1h 0.1Min 0.1s 0.1ms						
	Accuracy		$\begin{array}{c} \pm (0.1\% + 0.1 \ {\rm Hour}) \\ \pm (0.1\% + 0.1 \ {\rm Minute}) \\ \pm (0.1\% + 0.1 \ {\rm sec}) \\ \pm (0.1\% + 0.1 \ {\rm ms}) \end{array}$						
Γime Unit⁺				Hour, Minute	e, Second, ms				
	Range			0.1 - 999.9	9s, 0 = OFF				
Domen Lint	Resolution			0.	1s				
Ramp Up <sup>†</sup>	Accuracy		$\pm$ (0.1% + 1 Cycle) at Output frequency ≤ 10Hz $\pm$ (0.1% + 0.1 sec) at Output frequency > 10Hz						
MEASUREMENT									
	Range			0.0~1	200Hz				
requency	Resolution		0.1Hz / 1Hz						
requency	Accuracy		±0.1Hz @ 5 - 999.9Hz. ±1Hz @ 1000 - 1200Hz						
	Range		0 - 310V, 155/310V Auto Range						
/oltage (AC)	Resolution		0.1V						
	Accuracy		±(0.	2% of reading + 3 counts) at voltage :	> 5V	$\pm$ (0.2% of reading + 6 counts) at voltage > 5V			
	Range		0 - 420V, 210/420V Auto Range						
Voltage (DC)	Resolution			0.	1V				
	Accuracy		$\pm(0.2\%)$ of reading + 3 counts) at voltage > 5V			$\pm$ (0.2% of reading + 6 counts) at voltage > 5V			
	During	L	0.0 - 75.0W	0.0 - 3	00.0W	-			
	Range	н	60 - 625W	240 - 1563W	240 - 2500W	0 - 5000W			
		L		0.1W		-			
Current (AC, DC)	Resolution	н		1	W				
		L	$\pm$ (1% of reading +10 counts) at PF $\ge$ 0.3 and voltage > 5V	$\pm$ (2% of reading +15 counts	) at PF $\geq$ 0.3 and voltage > 5V	-			
	Accuracy	н	$\pm$ (1% of reading +5 counts) at PF $\ge$ 0.3 and voltage > 5V	$\pm$ (1% of reading +10 counts) at PF $\ge$ 0.3 and voltage $>$ 5V	$\pm$ (1% of reading +10 counts) at PF $\ge$ 0.3 and voltage > 5V	$\pm$ (1% of reading +20 counts) at PF $\geq$ 0.3 and voltage > 5V			
	Range	L	0.0 - 75.0W	0.0 - 3	00.0W	-			
		Н	60 - 625W	240 - 1563W	240 - 2500W	0 - 5000W			
	Resolution	L H		0.1W	W	-			
Power (AC, DC)		L	$\pm$ (1% of reading +10 counts)		) at PF $\geq$ 0.3 and voltage > 5V	-			
	Accuracy	н	at PF ≥ 0.3 and voltage > 5V $\pm$ (1% of reading +5 counts) at PF ≥ 0.3 and voltage > 5V	$\pm$ (1% of reading +10 counts) at PF $\ge$ 0.3 and voltage > 5V	$\pm$ (1% of reading +10 counts) at PF $\ge$ 0.3 and voltage > 5V	$\pm$ (1% of reading +20 counts) at PF $\geq$ 0.3 and voltage > 5V			
	Range			-	- 1.000	of and voluge > 5V			
Power Factor	Resolution			0.0	001				
	Accuracy			W/VA, Calculated and displa	yed to three significant digits				

† Available on in programmable mode option

# Specifications – 8500 Series

MEASUREMENT			8505	8512	8520	8540			
	Range	L	0.0 - 75.0VA		0.0 - 300.0VA				
Power Apparent	hange	Н	60 - 625VA	240 - 1563VA	240 - 2500VA	0 - 5000VA			
(VA) <sup>†</sup>	Resolution	L		0.1VA					
(11)		Н	1VA						
	Calculated F	ormula		V×A, Calculated value					
	Range		0.0 - 20.0Apk	0.0 - 50.0Apk	0.0 - 80.0Apk	0.0 -160.0Apk			
Peak Current	Resolution			0.1A					
Measurement <sup>+</sup> Accu	Accuracy			± (0.5% of reading + 8 counts)		$\pm$ (0.5% of reading +12			
			0.0.75.0/40	0.0.200	21/4 D	counts)			
	Range	L	0.0 - 75.0VAR	0.0 - 300.0		-			
Reactive Power	ver	H	60 - 625VAR	240 - 1563VAR	240 - 2500VAR	0 - 5000VAR			
Measurement <sup>†</sup>	Resolution	L		0.01A 0.01A					
	Calculated F	ormula	🔨 (VA)2 - (W)2						
Crest Factor	Range			0.00 - 10.00					
Measurement <sup>†</sup>	Resolution		0.01						
	Calculated F	ormula	Ap/A						
Software OCP			≤110% of full rated current (102% < lo ≤110%), >5 second output shut down						
			>110% of full rated current, <1.5 second output shut down						
Output Short Shut D	own Speed		<1 second ≤110% of full rated current (102% < Po ≤110%), >5 second output shut down						
Software OPP			>110% of full rated current, <1.5 second output shut down						
Software OVP			Over voltage 105% of full rated voltage						
Software VSENSE OV	'P	H	When measurement voltage exceeds setting voltage 10V						
		L	When measurement voltage exceeds setting voltage 5V						
Software VSENSE LVI	Р	H	When measurement voltage is lower than setting voltage 10V						
		L	L When measurement voltage is lower than setting voltage 5V						
Hardware OTP			Temperature over 108oC on power component of the PFC and DDC Temperature over 100oC on heatsink of the power amplifier						
Software RCP				Temperature over 1000C officea					
(Reverse Current Pro	toction)		When reverse power over 5% of full rated power						
·			When fan fails and fan is blocked						
Hardware FAN FAIL				when fan fails and	fan is blocked				
DIMENSION									
	W		430	430	430	430			
Dimension by Model			88	88	88	176			
	D		500	500	500	500			
Weight			15KG / 33LBS	15KG /33LBS	15KG /33LBS	28KG / 61.7LBS			
Storage Environmen	t		-40° to 75°C						
Operation Environm	ent			0-40oC/20-8	35% RH				

† Available on in programmable mode option

# **460XAC**

### **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 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**





Appliance





Motor

INPUT			460XAC
Phase			1Ø or 3Ø
Voltage			1Ø : 200~240 VAC ± 10% 3Ø3W : 200~240 VAC ± 10% 3Ø4W : 346~416 VAC ± 10%
Frequency			47 - 63 Hz
AC OUTPUT			
	10	ð2W	6000 VA
Power Rating	10	Ø3W	Total 4000 VA (2000 VA per phase)
Towernating	30	ð4W	Total 6000 VA (2000 VA per phase)
	1	DC	6000 VA
	1Ø2W	5- 150 V	55.2 A @ ≤110 V
		5 - 300 V	27.6 A @ ≤220 V
Max. Current	1Ø3W	5 - 150 V	18.4 A @ ≤110 V for per phase
(RMS)		5-300 V	9.2 A @ ≤220 V for per phase
	3Ø4W	5 - 150 V	18.4 A @ ≤110 V for per phase
		5-300 V	9.2 A @ ≤220 V for per phase
	1Ø2W	5 - 150 V 5 - 300 V	220.8 A 110.4 A
Inrush Current		5 - 150 V	73.6 A for per phase
(peak)	1Ø3W	5 - 300 V	36.8 A for per phase
(реак)		5 - 150 V	73.6 A for per phase
	3Ø4W	5 - 300 V	36.8 A for per phase
Phase		5 5001	102W, 103W, 304W, provided option
THD (Total Harm	nonic Dis	tortion)	<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 Regulat	ion (Haro	dware)	± (1% of output +1 V) at Resistive Load, <400 μS response time
Load Regulat			± 0.2 V, <1 S response time
DC offset			≤±5 mV
Poly-phase me for per phase			460XAC
Voltage	Range		5.0~300 VAC (phase), 8.6~520 VAC (line), 150/300 V Auto Range
	Accurac	у	$\pm$ (0.2% of setting + 3 counts)
Frequency	Range		40~1000 Hz Full Range Adjust
	Accurac	у	± 0.03% of setting
Starting & Ending	Range		0~359°
Phase Angle	Accurac	у	±1°(45~65 HZ)
Current Hi	5V~150		0.01~18.40 A
Limit	5V~300		0.01~9.20 A
	Accurac	-	± (2.0% of setting + 2 counts)
OC Fold Back Re	-	ime	<1.4 s
Ramp-Up Timer (second)	Range		0.0~999.9 s
	Accurac	у	± (0.1% + 0.05 sec)
Ramp-Down Timer (second)	Range Accurac	N .	0.0~999.9 s ± (0.1% + 0.05 sec)
Delay Timer	Range	y	1 s ~999.9 s 0.1 m~999.9 min 0.1 h~999.9 h
	Accurac	v	± (0.1% + 0.1 sec)
		,	0, 1%-999.9 h (0=continuous)
Dwell Timer			
Dwell Timer	Range	v	
Poly-phase m	Range Accurac ode (3Ø	4W) for	± (0.1% + 0.1 sec) 460XAC
Poly-phase me	Range Accurac ode (3Ø asurem	4W) for	± (0.1% + 0.1 sec) 460XAC
Poly-phase m	Range Accurac ode (3Ø asurem Range	4W) for ent	± (0.1% + 0.1 sec) 460XAC 0.0-1000 Hz
Poly-phase me	Range Accurac ode (3Ø asurem Range Resoluti	4W) for ent on	± (0.1% + 0.1 sec) 460XAC 0.0-1000 Hz 0.1 Hz
Poly-phase me per phase me Frequency	Range Accurac ode (3Ø asurem Range Resoluti Accurac	4W) for ent on	± (0.1% + 0.1 sec) 460XAC 0.0-1000 Hz
Poly-phase me	Range Accurac ode (3Ø asurem Range Resoluti	4W) for ent on y	± (0.1% + 0.1 sec) 460XAC 0.0-1000 Hz 0.1 Hz ± 0.1 Hz (501-1000 Hz Accuracy ± 0.2 Hz)
Poly-phase me per phase me Frequency	Range Accurac ode (3Ø surem Range Resoluti Accurac Range	4W) for ent on y on	± (0.1% + 0.1 sec) 460XAC 0.0-1000 Hz 0.1 Hz ± 0.1 Hz (501-1000 Hz Accuracy ± 0.2 Hz) 0.0-420.0 V

# Specifications – 460XAC

Poly-phase me			460XAC
	Range	L	0.005 A~2.400 A
		н	2.00 A~26.00 A
	Accuracy		± (1% of reading +5 counts) at 40.0-500 Hz
		L	± (1% of reading +5 counts) at 501-1000 Hz,
Current (RMS)			CF <1.5 and Current (peak) ≤7.2 A
			$\pm$ (1% of reading +5 counts) at 40.0-500 Hz
		н	$\pm$ (1% of reading +5 counts) at 501-1000 Hz,
		п	CF < 1.5 and Current (peak) ≤55.2 A
	D		0.0 A~76.0 A
	Range		± (1% of reading + 5 counts) at 40.0-70.0 Hz
Current (peak)			± (1.5% of reading + 10 counts) at 70.1 - 500 Hz
current (pearly	Accuracy		$\pm$ (1.5% of reading + 10 counts) at 501 - 1000 Hz and CF <1.5
	Range	L	0.0 W~240.0 W
		н	200 W~2600 W
_	Accuracy	L	$\pm$ (2% of reading +15 counts) at 40.0-500 Hz and PF $\ge$ 0.2
Power			± (2% of reading +30 counts) at 501-1000 Hz and PF ≥0.5
		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		0-1.000
			W / VA, Calculated and displayed to three significant digits
Power:	Accuracy	1	0.0 VA~240.0 VA
Power Apparent (VA)	Range	L	200 VA~2500 VA
		Н	
	Accuracy		V×A, Calculated value
Power Reactive (Q)	Range	L	0.0 VAR ~ ± 240.0 VAR
heactive (Q)		Н	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 m		for	460XAC
Σ measureme			
Frequency	Range		0.0-1000.0 Hz
	Accuracy		± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)
Voltage	Range		± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)
	Calculated Fo	1	$(A+B+C)/\sqrt{3}$ , Calculated and displayed to one significant digits
Current (RMS)	Range	L	0.005A~2.400A
		Н	2.00A~26.00A
	Calculated	L	$\frac{\sum VA}{\sum V} / \sqrt{3}$
	Formula		$\sum V^{-1}$
Dannan	-	H	
Power	Range	L	0.0W~720.0W
Power		L H	
Power	Range Accuracy	L H L	0.0W~720.0W
		L H	0.0W~720.0W 600W~7800W A Power + B Power + C Power, Calculated value
Power Power Factor	Accuracy Range	L H L	0.0W~720.0W 600W~7800W A Power + B Power + C Power, Calculated value 0 - 1.000
	Accuracy	L H L	0.0W~720.0W 600W~7800W A Power + B Power + C Power, Calculated value
	Accuracy Range	L H L	0.0W~720.0W 600W~7800W A Power + B Power + C Power, Calculated value 0 - 1.000
Power Factor	Accuracy Range Resolution Accuracy	L H H	$\begin{array}{c} 0.0W-720.0W\\ 600W-7800W\\ \end{array}$ A Power + B Power + C Power, Calculated value $\begin{array}{c} 0 - 1.000\\ 0.001\\ \end{array}$ $\begin{array}{c} \sum_{k'i}^{p} \\ \sum_{k'i} \end{array}$ Calculated and displayed to three significant digits
Power Factor Power	Accuracy Range Resolution	L H H	$0.0W~720.0W$ $600W~7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\sum^{p}}{\sum^{1/4}}$ Calculated and displayed to three significant digits $0.0VA~720.0VA$
Power Factor	Accuracy Range Resolution Accuracy Range	L H H	$\begin{array}{c} 0.0W-720.0W\\ 600W-7800W\\ \end{array}$ A Power + B Power + C Power, Calculated value $\begin{array}{c} 0 - 1.000\\ 0.001\\ \end{array}$ $\begin{array}{c} \sum_{k'i}^{p} \\ \sum_{k'i} \end{array}$ Calculated and displayed to three significant digits
Power Factor Power	Accuracy Range Resolution Accuracy Range Calculated	L H H L H	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{1/4}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$
Power Factor Power Apparent (VA)	Accuracy Range Resolution Accuracy Range Calculated Formula	L H H H L H L H	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0-1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{VA}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$
Power Factor Power Apparent (VA) Power	Accuracy Range Resolution Accuracy Range Calculated	L H H H L L H L L	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{1/4}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$ $0.0VAR-720.0VAR$
Power Factor Power Apparent (VA)	Accuracy Range Resolution Accuracy Range Calculated Formula Range	L H H L H L H H L H	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0-1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{VA}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$
Power Factor Power Apparent (VA) Power	Accuracy Range Resolution Accuracy Range Calculated Formula	L H H L H L L H L L L	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{V4}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$ $0.0VAR-720.0VAR$ $600VAR-7800VAR$
Power Factor Power Apparent (VA) Power Reactive (Q)	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	L H H H L H L H H L H H H H	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{1/4}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$ $0.0VAR-720.0VAR$
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	L H H H L H L H H L H H H H	0.0W-720.0W $600W-7800W$ $A Power + B Power + C Power, Calculated value$ $0 - 1.000$ $0.001$ $C - 0.001$ $C - 0.001$ $C - 0.001$ $C - 0.004 - 720.0VA$ $C - 0.0VA - 720.0VA$ $C - 0.0VA - 7800VA$
Power Factor Power Apparent (VA) Power Reactive (Q)	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	L H H H L H L H H L H H H H	$0.0W-720.0W$ $600W-7800W$ A Power + B Power + C Power, Calculated value $0 - 1.000$ $0.001$ $\frac{\Sigma^{P}}{\Sigma^{V4}}$ Calculated and displayed to three significant digits $0.0VA-720.0VA$ $600VA-7800VA$ $\sqrt{(\Sigma^{W})^{2} + (\Sigma^{Q})^{2}}$ $0.0VAR-720.0VAR$ $600VAR-7800VAR$
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy	L H H H L H L H H L H H H H	0.0W-720.0W $600W-7800W$ $A Power + B Power + C Power, Calculated value$ $0 - 1.000$ $0.001$ $C - 0.001$ $C - 0.001$ $C - 0.001$ $C - 0.004 - 720.0VA$ $C - 0.0VA - 720.0VA$ $C - 0.0VA - 7800VA$
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase Setting	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy mode (1Ø2)	L H H H L H L H H L H H H H	0.0W-720.0W $600W-7800W$ $A Power + B Power + C Power, Calculated value$ $0 - 1.000$ $0.001$ $C = Calculated and displayed to three significant digits$ $C = Calculated and displayed to three significant digits$ $C = Calculated and C = Cal$
Power Factor Power Apparent (VA) Power Reactive (Q) Single-phase Setting	Accuracy Range Resolution Accuracy Range Calculated Formula Range Accuracy mode (1Ø2) Range	L H H H L H L H H L H H H H	$\begin{array}{c} 0.0W-720.0W\\ 600W-7800W\\ \hline \\ \hline \\ A Power + B Power + C Power, Calculated value\\ \hline \\ 0.000\\ \hline \\ 0.001\\ \hline \\ \hline$

Single-phase mode (1Ø2W) Setting	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 & Range	0~359°
Ending Phase Resolution	1°
Angle Accuracy	± 1°(45~65 HZ)
5V~150V	0.01~55.20 A
Current Hi 5V~300V	0.01~27.60 A
Limit Accuracy	± (2.0% of setting + 2 counts)
OC Fold Back Response Time	<1.4 s
Single-phase mode (1Ø2W)	
measurement	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~78.00
Accuracy	± (1% of reading +5 counts) at 40.0~500 Hz
	$\pm$ (1% of reading +5 counts) at 501~1000 Hz, CF <1.5 and Current (peak) ≤165.6 A
Current (peak) Range	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~7800 W
Accuracy	± (2% of reading +5 counts) at 40.0~500 Hz and PF ≥0.2
neediacy	$\pm$ (2% of reading 15 counts) at 40.0 500 h2 and 17 $\pm$ 0.2 $\pm$ (2% of reading +15 counts) at 501~1000 Hz and PF $\ge$ 0.5
Power Factor Range	0 - 1.000
Accuracy	W / VA, Calculated and displayed to three significant digits
Power Range	0 VA~7800 VA
Apparent Accuracy	V×A, Calculated value
Power Range	0 VAR~7800 VAR
Reactive (Q) 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	460XAC
Voltage Range	5.0~300 VAC (phase), 10.0~600 VAC (line), 150/300 V Auto Range
Accuracy	$\pm$ (0.2% of setting + 3 counts)
Frequency Range	40~1000 Hz Full Range Adjust
Accuracy	± 0.03% of setting
Starting & Range	0~359°
Ending Phase Angle	± 1°(45~65 HZ)
5V~150V	0.01~18.40 A
50-1500	0.01-10.40 A
Current BLLimit 51/~3001/	0.01~0.20 Å
Current RI Limit 5V~300V	0.01~9.20 A
Accuracy	± (2.0% of setting + 2 counts)
Accuracy OC Fold Back Response Time	
Accuracy	± (2.0% of setting + 2 counts)
Accuracy OC Fold Back Response Time Poly-phase mode (1Ø3W) for per phase measurement Range	± (2.0% of setting + 2 counts) <1.4 s
Accuracy OC Fold Back Response Time Poly-phase mode (1Ø3W) for per phase measurement	± (2.0% of setting + 2 counts) <1.4 s 460XAC
Accuracy OC Fold Back Response Time Poly-phase mode (1Ø3W) for per phase measurement Frequency Range R	
Accuracy OC Fold Back Response Time Poly-phase measurement Prequency Range Accuracy	± (2.0% of setting + 2 counts)                  460XAC         0.0-1000 Hz         ± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)
Accuracy       OC Fold Back Resonance       Poly-phase mestremetry       Frequency       Range       Accuracy       Range       Accuracy       Yoltage       Accuracy	± (2.0% of setting + 2 counts)  <
Accuracy OC Fold Back Resonance Time Poly-phase mode (1Ø3W) for per phase mode (1Ø3W) for Prequency Range Accuracy Range Accuracy Range Accuracy	± (2.0% of setting + 2 counts)  <
Accuracy         OC Fold Back Resonance         Poly-phase mode (1Ø3W)         per phase mode (1Ø3W)         Frequency         Range         Accuracy         Voltage         Range         Range         Image         Range         Image         Range         Image	± (2.0% of setting + 2 counts)       <1.4 s
Accuracy       OC Fold Back Resonance Time       Poly-phase mode (1Ø3W) for per phase measurement       Frequency     Range Accuracy       Noltage       Range       Range       Range       Accuracy       Range       Range       Accuracy	± (2.0% of setting + 2 counts)               460XAC         0.0-1000 Hz         ± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)         0.0-420.0 V         ± (0.2% of reading + 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,
Accuracy       OC Fold Back Response Time       Poly-phase mode (1Ø3W) for per phase measurement       Frequency     Range Accuracy       Voltage     Range Accuracy       Range     H	± (2.0% of setting + 2 counts)               460XAC         0.0-1000 Hz         0.0-1000 Hz         ± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)         0.0-420.0 V         ± (0.2% of reading + 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, CF <1.5 and Current (peak) ≤7.2 A
Accuracy           OC Fold Back Resonance         Image: State of the state	± (2.0% of setting + 2 counts)               460XAC         0.0-1000 Hz         ± 0.1 Hz (501-1000 Hz Accuracy ±0.2 Hz)         0.0-420.0 V         ± (0.2% of reading + 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,

# Specifications – 460XAC

Poly-phase m per phase me			460XAC
	Range		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
	D	L	0.0 W~240.0 W
	Range	Н	200 W~2600 W
Power	Accuracy	L	$\pm$ (2% of reading +15 counts) at 40.0-500 Hz and PF ≥0.2 $\pm$ (2% of reading +30 counts) at 501-1000 Hz and PF ≥0.5
		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
	Accuracy		W / VA, Calculated and displayed to three significant digits
Power	Range	L	0.0 VA~240.0 VA
Apparent (VA)		Н	200 VA~2600 VA
	Accuracy		VxA, Calculated value
	Denne	L	0.0 VAR~240.0 VAR
Power Reactive (Q)	Range	н	0 VAR~2600 VAR
neactive (Q)	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 m	ode (1Ø3W	/) for	460XAC
L1-L2 measure			
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~2.400A
	Calculated Formula	н	2.00~26.00A
		L	Σ14
		Н	$\frac{\Sigma^{VA}}{\Sigma^{V}}$
Power	Range	L	0.0W~480.0W
i olici	lange	H	400W~5200W
	A	L	4000-22000
	Accuracy	Н	L1 Power + L2 Power, Calculated value
Power Factor	Range		0 - 1.000
	Calculated F	ormula	(L1 P + L2 P) / (L1 VA + L2 VA), Calculated and displayed to three significant digits
Power	Range	L	0.0W~480.0VA
Apparent (VA)		Н	± 400W~5200VA
	Calculated	L	
	Formula	Н	$\sqrt{(\sum^W)^2 + (\sum^Q)^2}$ Calculated value
Power	Pango		0.0VAR ~ ± 480.0VAR
Reactive (Q)	Range	L	
	C.L. L.L.	H	± 400VAR ~ ± 5200VAR
	Calculated Formula	L H	L1 VAR + L2 VAR, Calculated value
DC OUTPUT			
Max. Power			6000 W
Max. Current	0-210	0 V	28.8 A
	0-42		14.4 A
Ripple and Nois			Range: 5-210 V <700 mV
inppic und trois	c (11115)		Range: 5-420 V <1100 mV
Ripple and Nois	e (n-n)		<4.0 Vp-p
	c (p-p)		
DC SETTINGS			
Voltage	Range		5-210 V / 5-420 V Selectable
	Accuracy		± (0.2% of setting + 3 counts)
<b>~</b>	5 V-210 V		0.10 - 28.80 A
Current Hi Limit	5 V-420 V		0.10 - 14.40 A
	Accuracy		± (2.0% of setting + 2 counts)
	sponse Time		<1.4s

DC MEASURE	MENT	460XAC			
Voltage	Range	0.0-420.0 V			
	Accuracy	± (0.2% of setting + 5 counts)			
Current	Range	0.05 A~39.00 A			
	Accuracy	± (1% of reading +5 counts)			
Power	Range	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 ~ 110% of full power >5 second.			
		When over Power >110% of full power <1 second.			
Software OTP		Temperature over 120 degree C on the power amp and PFC heatsink			
Software OVP		When output frequency < 100Hz, maximum voltage deviation + 5V			
	L	When output frequency 101-500Hz, maximum voltage deviation + 15V			
		When output frequency 501-1000Hz, maximum voltage deviation + 20V			
		When output frequency < 100Hz, maximum voltage deviation + 10V			
	н	When output frequency 101-500Hz, maximum voltage deviation + 30V			
		When output frequency 501-1000Hz, maximum voltage deviation + 40V			
Software LVP		When output frequency < 100Hz, maximum voltage deviation -5V > 0.5 second			
	L	When output frequency 101-500Hz, maximum 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			
		When output frequency 501-1000Hz, maximum voltage deviation -40V > 0.5 second			
<b>Reverse Current</b>	Protection (RCP)	Over 75W			
GENERAL					
Transient (only f	or 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			
<b>Operation Key F</b>	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			
Efficiency		≥78% (at Full load)			
Auto Loop cycle		0 = Continuous, OFF, 2~9999			
Over Current Fo		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		125.6 lbs (57 kg)			
2	onment	125.6 lbs (57 kg) 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 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.

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