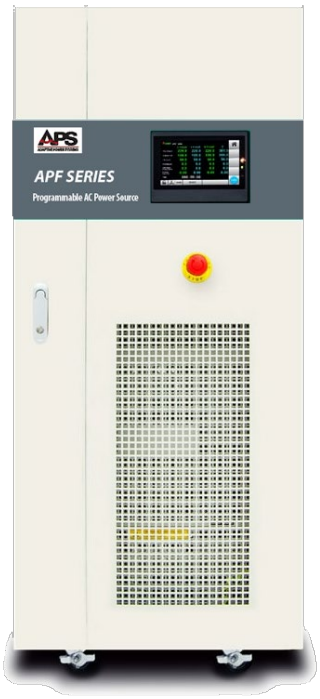
APF1000 Series | Single-Phase

Programmable AC Source
10 up to 45 kVA/KW



RoHS Compliant CE

10, 20, 45 kVA / kW

- Output Voltage:
  - 0-155V low range, 0-310V high range
  - Option: 0-400V (L-N) or 0-600V (L-N)
- Output Frequency: 45-120Hz standard
  - Option: 45-500Hz or 300-840Hz
- Total Harmonic Distortion (THD): ≤ 0.5%
- Precise Output Regulation: ≤ 0.5%
- Up to 200% overload capability (optional)

Standard RS-232 RS-485 Ethernet

Option GPIB Analog USB

APF1000 Series: Designed for Performance, Reliability & Precision

The **Adaptive Power Systems APF1000 Series** provides a practical, reliable, and easy to use test solution *without complexity.*

Ideal for programmable high-power testing and simulation applications, the APF Series provides clean, stable power with **low harmonic distortion (THD ≤ 0.5%)** and **precise output regulation (≤ 0.5%)**, ensuring accuracy in the most demanding environments.

Key Advantages

- Affordable Programmable Power
- User-Friendly Interface, Easy to Use
- Clean, Stable Power with Low THD
- Consistent, Reliable Performance
- Practical Power Simulation Capabilities
- Adaptable for Diverse Needs
- Layers of Safety
- Excellent Customer Support

Applications

Frequency Conversion
Accurately simulate range of frequency conditions.

Home Appliance Testing
Simulate real-world voltage conditions for reliability testing.

Motor, Transformer Testing
Deliver precise frequency and voltage adjustments for performance evaluation.

Medical Equipment
Ensure stable and clean power for critical devices.

Lighting and EMC Laboratory Use
Meet industry standards for compliance testing.

Advanced Programmability *Without the Complexity*

User-Friendly Touch Screen

Simplifies setup and monitoring with an easy-to-use interface.

Single Phase RAMP and STEP Adjustment

Easily simulate power line disturbances using built-in STEP and RAMP functions.

Easily automate high line / low line voltage immunity test sequences using either mode.

- 24 STEP Entries available
- 12 RAMP Entries available

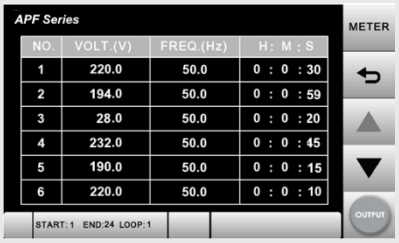


Figure 1 STEP Mode Screen

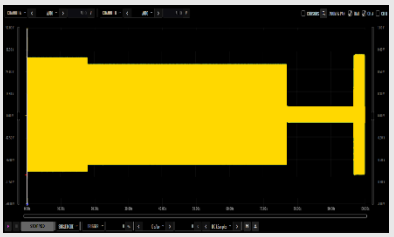


Figure 2 Scope Capture STEP Output

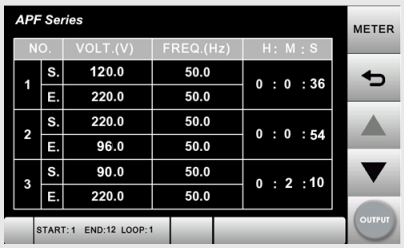


Figure 3 RAMP Mode Screen

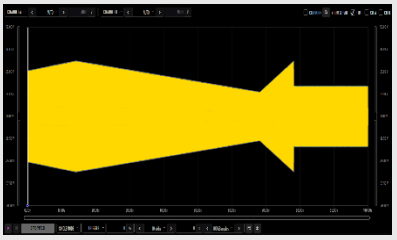


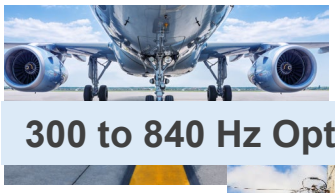
Figure 4 Scope Capture RAMP Output

Built-in Safety Protection Features

- **Comprehensive Under/Over Protections:** UVP, OVP, OCP, OTP
- **29 Additional Safety Features:** Protects the power source & DUT
- **Screen Lock Password Function**: Restrict unauthorized access to critical settings
- **CE and RoHS Certified:** Meets international safety and environmental standards.

Flexible Options to Meet Your Test Requirements

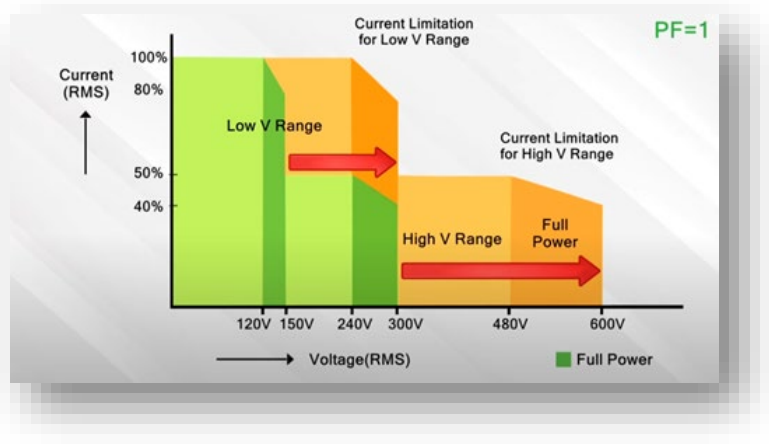
Broader Frequency & Higher Voltage Range (Optional)



300 to 840 Hz Option

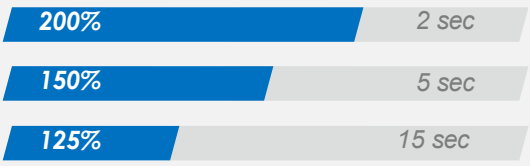
400V, 600V Option

- **Optional frequency from 300 to 840Hz** ideal for aerospace and defense or used for double frequency test of a transformer.
- **Optional Output up to 400V(L-N)/690V(L-L) or 600V(L-N)/1039V(L-L)** motors that need higher input voltage.



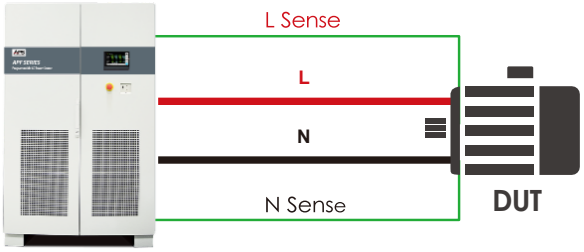
Overload Capability (Optional)

An inductive UUT (Unit under Test), such as motor or water pump, can generate significant inrush current when activated. The APF Series has optional overload capability that can support this inrush current as needed.



Remote Voltage Drop Compensation (Optional)

Remote Sensing capability compensates for voltage drop caused by long cable lengths so there is no need to adjust the set voltage.



Technical Specifications

Single Phase Output Models – 10kVA, 20kA, 45kVA

Model:		APF1010	APF1020	APF1045
AC Output				
Power (kVA / kW)		10	20	45
Phase Mode		Single Phase, 2 Wire + Ground		
Voltage Range		Low: 0 ~ 155 V L-N; High: 0 ~ 310 V L-N		
Resolution		0.1 V		
Accuracy		0.5% F.S. + 4 Counts		
Frequency Range[1]		A version: 45~500Hz, B version: 45~120Hz, C version: 300~840Hz		
Resolution		0.1 Hz		
Accuracy		± 0.02% F.S.		
Current RMS max.	Low Vrange	83.3 A	166.7 A	375.0 A
	High Vrange	41.7 A	83.3 A	187.5 A
Line Regulation		< 0.5 %		
Load Regulation		≤ 0.5% (Resistive Load)		
Voltage Distortion	THD[2]	≤ 0.5% (Resistive Load)		
Response Time	V change	≤ 1 msec		
Crest Factor	Current	≥ 3:1		
Measurements				
		Range	Resolution:	Accuracy:
Voltage	Vrms	0 ~ 310V	0.1 V	0.5% F.S. + 4 counts
Frequency	Hz	45.0 ~ 840 Hz	0.01 Hz	±0.02% F.S.
Current	Arms	See Current Spec.	0.1 A	0.5% F.S. + 4 counts
Power	KWatt	See kVA Spec.	0.1 kW	1.0% F.S + 6 counts
AC Input Mains				
Frequency Line		47 Hz ~ 63 Hz		
Phase Mode		3 Phase / 3 Wire + Ground		
Input Voltage[3]	-208	208Vac ± 10%		
Line Current	Max[4]	40	80	181
Input Voltage[3]	-480	480Vac ± 10%		
Line Current	Max[4]	17	35	78
Input Power Factor		≥ 0.9 @ Max. Power		
General Specifications				
Efficiency	> 90% at Max. Power			
User Interface	7” Color Touch Screen			
Program Modes	**STEP**: 24 sets / 255 cycles. (Volt./Freq./Time) | **RAMP:** 12 sets / 255 cycles. (Volt./Freq./Time)			
Soft Start	Setting: Rated Volt. / Rated Freq. / Start Volt. / Start Freq. / Delay Time / Ramp Time			
Protections	Input : Input No Fuse Breaker (N.F.B), Over Voltage, Under Voltage, Output : Over Voltage, Over Current, Over Temperature Unit will display the error code and give a warning sound.			
Remote Control	**Standard:** RS-232/RS-422/RS-485/Ethernet; **Available Options:** GPIB, Analog, USB			
Temperature/Humidity	Temp: 0° ~ 45° operating; Humidity: 0 ~ 90%, non-condensing			
Dimensions[5] **(Including wheels)**	H x W x D	1045 x 628 x 840 mm 41.2” x 24.7” x 33”	1440 x 628 x 840 mm 56.7” x 24.7” x 33”	1645 x 828 x 840 mm 64.8” x 32.6” x 33”
Weight	kg / lbs	230kg / 507lb	320kg / 705.5lb	580kg / 1278.7lb

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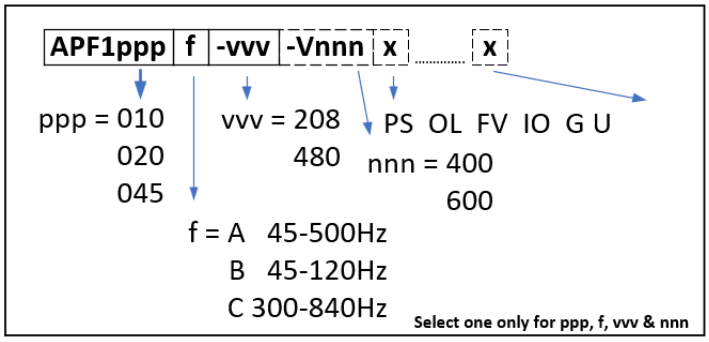
1. For type A(45-500Hz) and models with output power of 20kVA +, the available output power derates from 100% at 100Hz to 60% at 500Hz.
2. THD shown is for the output frequency from 45 to 65Hz and output voltage setting from 90 - 140Vac on Low voltage range or 180 - 280Vac on High voltage range and with a resistive load. THD for type C 300-840Hz frequency range models is ≤ 2%,
3. Please contact us for other available input voltage specifications options.
4. The max. input current is calculated at stated AC input voltage nominal - 15% (low line)

Ordering Information

Standard Models	Description	AC Input
APF1010	AC Power Source, Single Phase Output, 15kVA	-208 or -480V
APF1020	AC Power Source, Single Phase Output, 30kVA	-208 or -480V
APF1045	AC Power Source, Single Phase Output, 45kVA	-208 or -480V

APF Option	Power (VA) Note
A	Type A: Output Frequency 45-500Hz*3. Changes "B" postfix to A
B	Type B: Output Frequency 45-120Hz*3. No Charge.
C	Type C: Output Frequency 300-840Hz*1*3 Changes "B" postfix to C
PS	Programmable Start Angle 0-359°*3
OL	Overload Capability 200% 2 sec, 150% 5 sec, 125% 15 sec*3
FV	Fast Voltage Response Option (with Time Setting Resolution 0.01S)*2
IO	Analog Control Interface
G	GPIB Interface
P3	Three Phase Angle Adjustment (3 Phase Models only)
-200	Input Voltage 200V*3
-208	Input Voltage 208V*3
-240	Input Voltage 240V*3
-400	Input Voltage 400V
-480	Input Voltage 480V
V400	Output Voltage 0-400V (L-N)
V600	Output Voltage 0-600V (L-N)
U	Interface Card (Ethernet/RS-232&RS-485/USB) Replaces standard Ethernet / RS232 / RS485

Ordering Encoder



Note: For A,B,C, these three alternative frequency ranges are **mutually exclusive** and have to be selected at time of order**. E.g. APF1010B-208-V400PSOLUSB** – Single-phase, 10kVA AC source with 208Vac Grid Input, the optional 400Vac range output transformer option and the programmable start phase angle option PS with Overload and USB options.