CFS 300 Series

Single and Three Phase AC or DC Power Testing Simplified...

AC Power DC Power

CFS330	CFS360
3 kVA	6 kVA
AC Mode: 40 - 1000 Hz 5 - 300 V_{LN} / 8.6 - 520 V_{LL}	
DC Mode: 5 - 420Vdc	

CE USB Universal Serial Bus RS232 LAN

Look no further for cost effective AC or DC power test solutions than the CFS300 Series programmable power sources. Designed to perform a wide range of AC and/or DC tests with good performance and excellent reliability, the APS CFS300 units are industry work horses.

Available in two distinct power levels of 3 kVA and 6 kVA, a wide range of commercial, industrial and aviation type equipment testing is covered by either model. Model CFS330 can be operated using single phase AC utility input power. Model CFS360 can be operated from either single phase or three phase 208V or 400V utility power.

CFS300 Series Key Features

The CFS300 Models come loaded with Features such like:

- Choice of Power Levels to fit your Requirements
- Single, Split and Three phase AC Output Modes
- Both AC and DC Output Capability
- Wide AC Frequency Range of 40 Hz to 1,000 Hz covers both industrial/commercial and avionics/defense applications
- Complete range of Measurements
- Fifty Memory Locations with Nine Test Steps for Pass/Fail Measurements against pre-set Limits
- Voltage Drop-out Test Capability built-in
- Programmable Start/Stop Phase Angle
- Standard USB and RS232 Remote Control Interfaces
- Optional Ethernet / LAN Interface for ATE Test System Use
- Single Phase AC Input (Model CFS330) or Single and Three Phase AC Input (Model CFS360)
- CE Mark

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EASY POWER TESTING OF AC OR DC PRODUCTS

Testing both AC and DC powered products for performance to specifications and proper operation has never been easier or more cost effective than with the CFS300 Series programmable power sources. These floor standing and rack mountable units make it easy to test both single, split and three phase AC products or DC products, all with the same instrument.

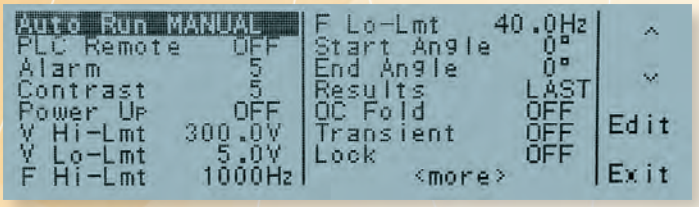
Available in two power levels, the CFS300 units feature an intuitive menu driven user interface with a large backlit LCD display that shows settings and measurements.

Two modes of operation are available to the user:

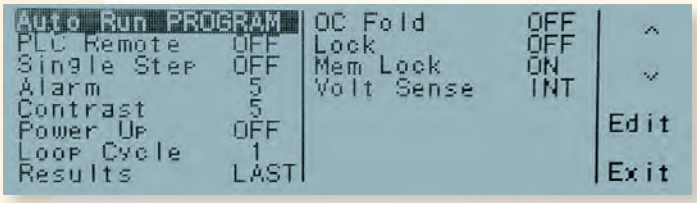
- **Manual Mode** - Allows manual settings of all output parameters
- **Program Mode** - Allows sequencing through up to 9 test steps, each having distinct output settings and measurement pass/fail test limits

Programs can be stored in the 50 available non-volatile memory locations for quick recall. Each program memory can be assigned an name for easy reference to a test requirement or EUT. For quick setups of lab work, Manual mode is an easy way to change output values and observe measurement data without any limit testing.

Manual Mode or Pass / Fail Limit Testing



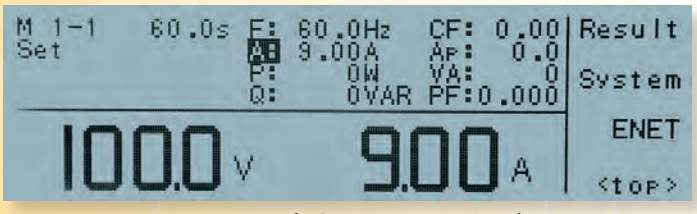
Manual Mode Setup Screen



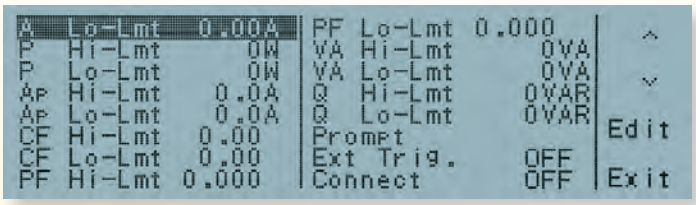
Program Mode Setup Screen

Manual Mode allows setting individual output parameter settings and limits. By setting limits on voltage and frequency, accidental output settings that could damage an EUT can be avoided. When the Test Output button is pushed, power is applied to the EUT and the LCD screen displays all measurement values. Large characters are used for Voltage and one other parameter selected from the available measurements in the upper half of the display.

Program Mode allows a sequence of up to nine timed test steps to be applied to the EUT. At each step, measurements are taken and compared to pre-set pass/fail limits. If all selected measurements pass, the output proceeds to the next test step once the programmed dwell time has expired. If not, an alarm sounds and the power to the EUT is cut. This mode is ideal for production test and pass fail testing without the need to develop test software.



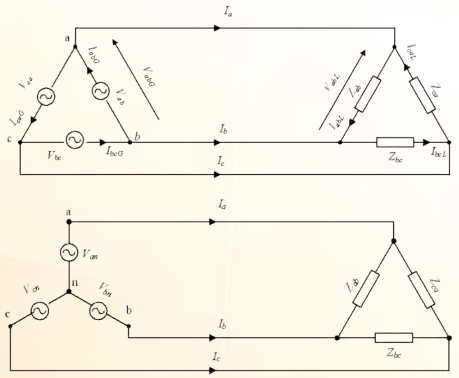
Program Mode Step Metering Display



Test Limits Setup Screen

AC Delta / Wye Connections

All load connections are made at the rear panel. Both delta and Wye three phase loads are supported using the Phase A, B, C and Neutral terminal posts. Connections for single and split phase or DC loads are indicated on the rear panel as well. A safety cover is provided. For higher power loads, external voltage sense is available to compensate for load wire drops.



Instrument Specifications

MODEL		CFS330	CFS360
OUTPUT SPECIFICATIONS - AC MODE			
Phase Modes		1ø/2W, 3ø/3W & 3ø/4W	
Power Rating	Total Power	3 kVA	6 kVA
	3 & 4W/Phase	1 kVA	2 kVA
	2W	3 kVA	6 kVA
Voltage Auto Range High/Low	1ø/2W (single)	5 - 150V_{LN} / 5 - 300V_{LL}	
	1ø/3W (split)	5 - 300V_{LL} / 5 - 600V_{LL}	
	3ø/4W (three)	8.6 - 260V_{LL} / 8.6 - 520V_{LL}	
	Resolution	0.1 V	
	Accuracy	± (0.2% setting + 0.3 V)	
Current-2W	0-150V	27.6 A	55.2 A
	0-300V	13.8 A	27.6 A
Current-3W /4W	0-150V	9.2 A	18.4 A
	0-300V	4.6 A	9.2 A
OC Fold-back Response		< 1.4 secs	
Peak Cur. 2W	0-150V	110.4 A	220.8 A
	0-300V	55.2 A	110.4 A
Peak Cur. 3W /4W	0-150V	36.8 A	73.6 A
	0-300V	18.4 A	36.8 A
Crest Factor		≥ 3 to 1	
Frequency	Range	40 - 1000 Hz	
	Resolution	0.1 Hz from 40.0-99.9 Hz 1 Hz from 100 - 1000 Hz	
	Accuracy	± 0.03% Setting	
Start/Stop Phase	Range	0 - 359°	
	Accuracy	±1%, 45- 65 Hz	
Harmonic Distortion (Full Resistive Load)		< 0.5% 40-70 Hz, 80-140V_{LN} on Low Range or 160-280V_{LN} on High Range	
		< 1.0% > 70 Hz, 80-140V_{LN} on Low Range or 160-280V_{LN} on High Range	
Line Regulation		± 0.1 V for a 10% Line Change	
Load Regulation		± 1.0% Range + 1V, R Load	
Response time		< 400 usec	
Protection		Over Current, Short Circuit, Over Voltage, Under Voltage, Over Temperature	

MODEL		CFS330	CFS360
MEASUREMENT SPECIFICATIONS -SINGLE PHASE MODE			
Current RMS	Range	0.05 - 39.00 A	0.05 - 78.00 A
	Accuracy	± (1% of reading + 0.05 A) CF < 1.5 and Current (peak) ≤ 82.8 A	± (1% of reading + 0.05 A) CF < 1.5 and Current (peak) ≤ 165.6 A
Current Peak	Range	0.0 - 114.0 A	0.0 - 228.0 A
	Accuracy	± (1% of reading + 0.5A @ 40.0-70.0 Hz ± (1.5% of reading + 1A @ 70.1 - 500 Hz ± (1.5% of reading + 1A @ 501 - 1000 Hz and CF<1.5	
Power	Range	0 - 3900 W	0 - 7800 W
	Accuracy	±(2% of reading+5 W) @ 40.0-500Hz, PF>0.2 ±(2% of reading+15 W) @ 501-1000Hz, PF>0.5	
App. Power	Range	0 - 3900 VA	0 - 7800 VA
	Accuracy	V x A, Calculated	
React. Power	Range	0 - 3900 VAR	0 - 7800 VAR
	Accuracy	Sqrt(VA^2 x W^2), Calculated	
Freq, Power & Crest Factor		See Three & Two Phase Mode	

MODEL			CFS330	CFS360
MEASUREMENT SPECIFICATIONS - THREE & TWO PHASE MODE				
Frequency	Range		0.0 - 1000.0 Hz	
	Resolution		0.1 Hz	
	Accuracy		± 0.1Hz < 500Hz, ± 0.2Hz > 500Hz	
Current RMS	Range	L	0.005 - 1.200 A	0.005 - 2.400 A
		H	1.00 - 13.00 A	2.00 - 26.00 A
	Accuracy	L	± (1% of reading + 0.005 A) CF < 1.5 and Current (peak) ≤ 3.6 A	± (1% of reading + 0.005 A) CF < 1.5 and Current (peak) ≤ 7.2 A
		H	± (1% of reading + 0.05 A) CF < 1.5 and Current (peak) ≤ 27.6 A	± (1% of reading + 0.05 A) CF < 1.5 and Current (peak) ≤ 55.2 A
Current Peak	Range		0.0 - 38.0 A	0.0 - 76.0 A
	Accuracy		± (1% of reading + 0.5A @ 40.0-70.0 Hz ± (1.5% of reading + 1A @ 70.1 - 500 Hz ± (1.5% of reading + 1A @ 501 - 1000 Hz and CF<1.5	
Power	Range	L	0.0 - 120.0 W	0.0 - 240.0 W
		H	100 - 1300 W	200 - 2600 W
	Accuracy	L	±(2% of reading+1.5 W) @ 40.0-500Hz, PF>0.2 ±(2% of reading+3 W) @ 501-1000Hz, PF>0.5	
		H	±(2% of reading+5 W) @ 40.0-500Hz, PF>0.2 ±(2% of reading+15 W) @ 501-1000Hz, PF>0.5	
Power Factor	Range		0.000 - 1.000	
	Accuracy		W / VA, Calculated to 3 digits	
App. Power	Range	L	0.0 - 120.0 VA	0.0 - 240.0 VA
		H	100 - 1300 VA	200 - 2600 VA
	Accuracy		V x A, Calculated	
React. Power	Range	L	0.0 - 120.0 VAR	0.0 - 240.0 VAR
		H	100 - 1300 VAR	200 - 2600 VAR
	Accuracy		Sqrt(VA^2 x W^2), Calculated	
Crest Factor	Range		0.00 - 10.00	
	Accuracy		Ap / A, Calculated to 2 digits	

MODEL		CFS330	CFS360
OUTPUT SPECIFICATIONS - DC MODE			
Power Rating		3 kW	6 kW
DC Voltage Ranges		5 -210Vdc / 5 - 420Vdc	
	Resolution	0.1 Vdc	
	Accuracy	± (0.2% Setting + 0.3V)	
Ripple & Noise RMS		210 Rng <700 mV, 420 Rng <1100 mV	
Ripple & Noise p-p		< 4.0 Vpp	
Max. Current	210V Rng	14.4 A	28.8 A
	420V Rng	7.2 A	14.4 A
	Accuracy	± (2.0% Setting + 0.2 A)	

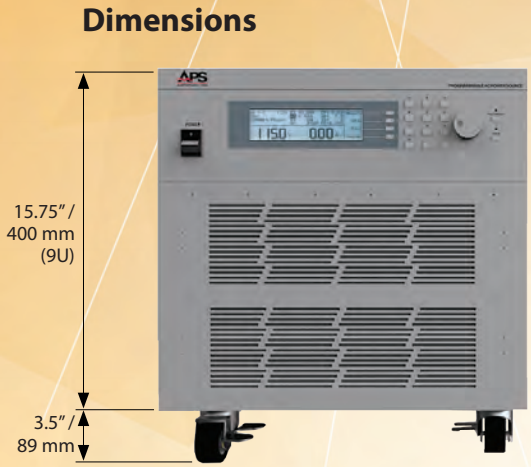
MODEL		CFS330	CFS360
MEASUREMENT SPECIFICATIONS -DC MODE			
Voltage DC	Range	0.0 - 420.0 Vdc	
	Accuracy	± (0.2% Setting + 0.3V)	
Current DC	Range	0.05 - 19.50 Adc	0.05 - 39.00 Adc
	Accuracy	± (1.0% Setting + 0.05 Adc)	
Power	Range	0 - 3900 W	0 - 7800 W
	Accuracy	± (2.0% Setting + 5 W)	

Instrument Specifications - Continued

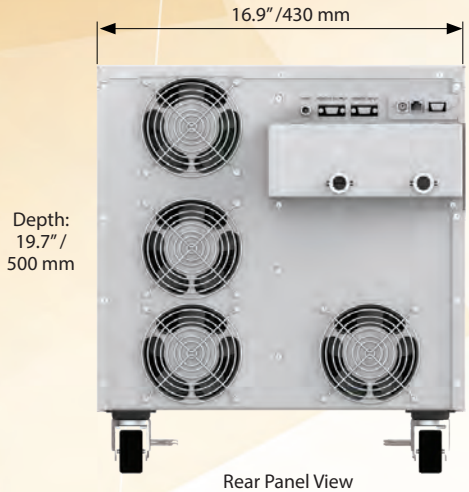
MODEL		CFS330	CFS360
AC INPUT SPECIFICATIONS			
Input Phases		1ø	1ø or 3ø
Input Voltage	1ø Input	200-240Vac±10%	200-240Vac±10%
	3ø Input, 3W		200-240Vac±10%
	3ø Input, 4W		346-416Vac±10%
Max. Input Current		23A	1ø: 45A
			3ø, 3W: 26A
			3ø,4W: 15A
Max. VA Input Power		4 kVA	8 kVA
Frequency		47 - 63 Hz	
Input Power Factor		PFC, > 0.97 @ Full Load	
Efficiency		> 78% @ Full Load	

MODEL	CFS330	CFS360
MECHANICAL & ENVIRONMENTAL SPECIFICATIONS		
Dimensions (WxHxD)	430 x 400 x 500 mm	
	16.9" x 15.75" x 19.7"	
Caster Height	89 mm / 3.5"	
Rack Mount	Handle & Rack Ear Kit included	
Weight	48 Kg / 105.8 lbs	57 Kg / 125.6 lbs
Operating Environment		
Temperature	0 - 40° C / 32 - 104° F	
Humidity	20 - 80% R.H. Non-condensing	
Regulatory		
Safety & EMC	CE	

Dimensions



Front Panel View



Rear Panel View

MODEL	CFS330	CFS360
INTERFACES AND I/O		
Remote Control	RS232, USB	
LAN / Ethernet[1]	Option -LAN	
Output Sync Signal	+5Vdc Out, BNC connector, rear panel	

Note1: LAN option includes RS232 but deletes USB interface.

Ordering Information

MODEL	DESCRIPTION	AC INPUT CONFIGURATION
CFS330-230	AC&DC Power Source, 3kVA, USB/RS232	Single Phase, 200 - 240 Vac
CFS330-230-LAN	AC&DC Power Source, 3kVA, LAN/RS232	
CFS360	AC&DC Power Source, 6kVA, USB/RS232	Specify: Single Phase 230V, Three Phase 208V or Three Phase 400V/3ø on PO
CFS360-LAN	AC&DC Power Source, 6kVA, LAN/RS232	

Service and Support

Adaptive Power Systems' customer support is second to none. Our Customer Support Program provides the training, repair, calibration, and technical support services that our customers value. So, in addition to receiving the right test equipment, our customers can also count on excellent support before, during and after the sale. With company owned support and service centers around the world, support is never far away.

New Product Warranty: AC Sources & Loads: 1 year, DC Power Supplies: 2 years.
Complete calibration and repair services are offered at our US, European and Chinese manufacturing facilities (see contact info below). Calibrations are to original factory specifications and are traceable to NIST (National Institute of Standards and Technology).

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