

# CPS 100 Series

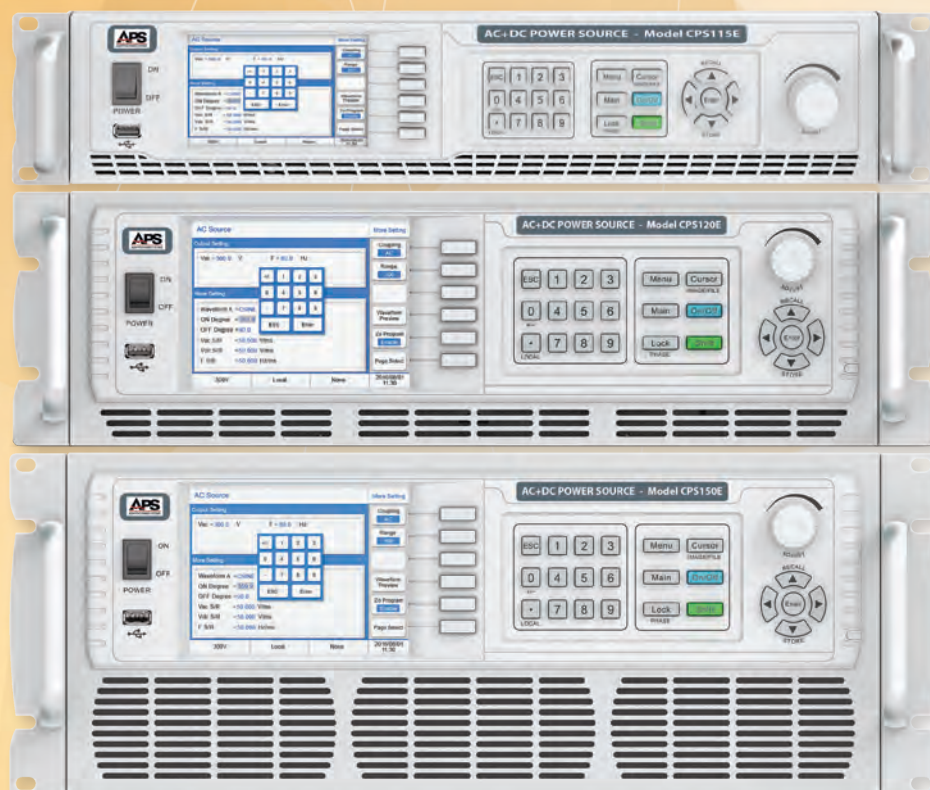
## Advanced AC and DC Programmable Power



AC Power



DC Power



### CPS Series

**600 VA/W to 5000 VA/W**

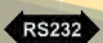
**AC: 0 - 150 V / 0 - 300 V**  
**15 - 1000 Hz (S)**  
**15 - 1200 Hz (E)**

**DC: 0 - 212 V / 0 - 424 V**

**Look no further** for powerful yet cost effective single phase AC and DC power test solutions than the compact CPS100 Series programmable power sources. Designed using state-of-the-art Digital Signal Processing, these power sources support a wide range of AC and/or DC tests with excellent performance and reliability, the CPS100 units are versatile power sources with a wide range of functions and capabilities.

Available in seven power levels from 600 VA to 5000 VA, a wide range of commercial, industrial and aviation test applications are covered. Models up to 1500VA can be operated from either 100V to 265V universal AC input power. Models of 2000VA and higher can be operated from single phase 230V or split phase 208V AC power.

Model:	CPS106	CPS110	CPS115	CPS120	CPS130	CPS140	CPS150
Power:	600W	1000W	1500W	2000W	3000W	4000W	5000W
150Vac	4.8 A	8 A	13.8 A	16 A	27.6 A	32 A	46 A
300Vac	2.4 A	4 A	6.9 A	8 A	13.8 A	16 A	23 A
Height	2U			3U	4U		



Worldwide Supplier of Power  
Conversion Equipment

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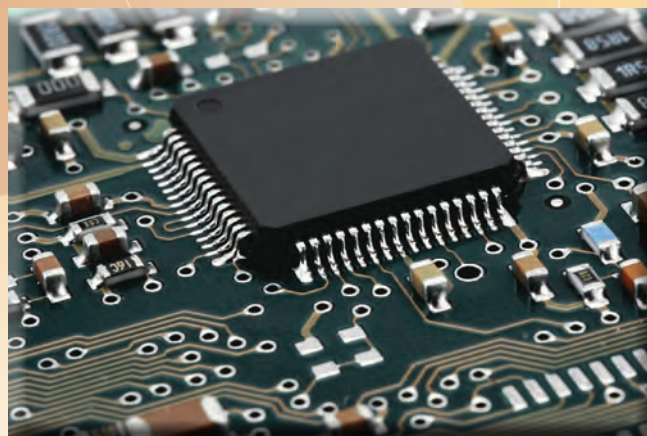
(ES) Equipements Scientifiques SA - Département Tests & Mesures - 127 rue de Buzenval BP 26 - 92380 Garches  
Tél. 01 47 95 99 45 - Fax. 01 47 01 16 22 - e-mail: [tem@es-france.com](mailto:tem@es-france.com) - Site Web: [www.es-france.com](http://www.es-france.com)



## VALUE & PERFORMANCE BY LEVERAGING MODERN TECHNOLOGY

The all new CPS100 Series of precision power sources uses state of the art digital signal processing and programmable logic technology to implement a digital power conversion topology that combines high efficiency with a rich feature set and excellent specifications.

Packaged in a compact, standard 19" rack mount chassis, these powerful functions are easily accessible through an easy to use, color touch screen based user interface from the front panel or by sending industry standard SCPI commands over one of several standard digital control interfaces.



## BROAD RANGE OF APPLICATIONS

The extensive feature set of the CPS100 Series power sources makes them suitable for a broad range of AC and or DC power applications. With power levels from 500VA

to 5000VA per unit and paralleling capability, a wide range of present and future power demands can be met.  
**Put the CPS100 Series to the test!**

*Electric Vehicle Charging*



*Military Applications*

*Automated Test Equipment*



*Commercial Aviation 400Hz - 800Hz*



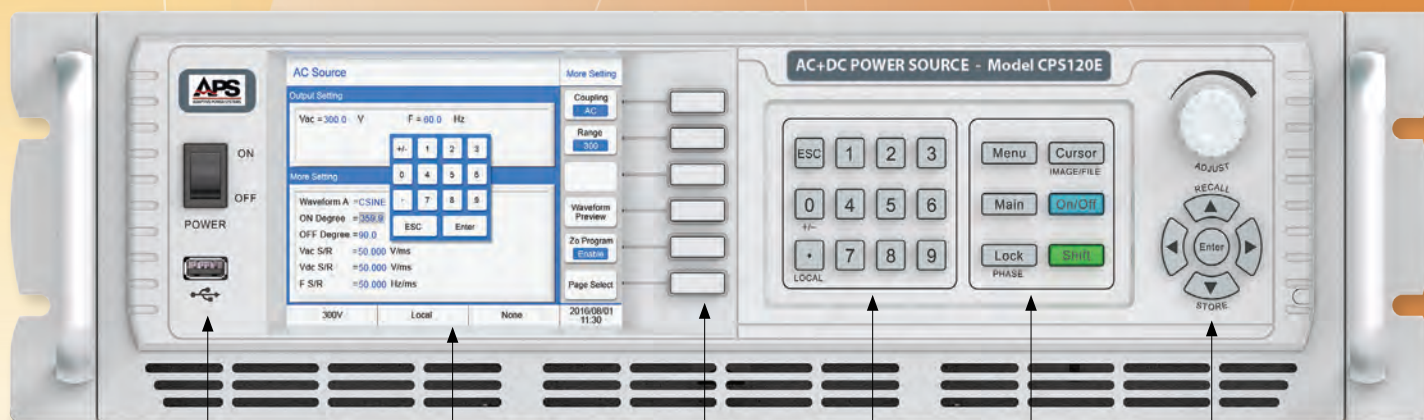
*EMC Compliance Testing*



*Research & Development*



## MODERN USER INTERFACE FOR EASE OF OPERATION



Power On/OFF  
& USB Port

Color LCD Touch Display

Soft Keys

Keypad

Menu Keys

Shuttle & Cursor  
Keys

All CPS100 Series models share an intuitive user interface using a combination of touch, soft keys, decimal entry pad and rotary shuttle knob. This results in an easy to use power source for novice and experienced users alike.

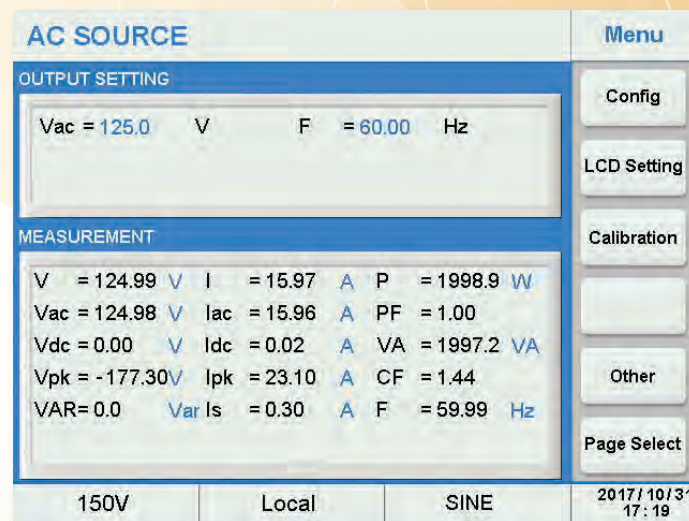
The large color LCD allows visualization of arbitrary waveforms as well as a wide assortment of precision AC and DC measurements.

### MODE AND VOLTAGE RANGE SELECTION



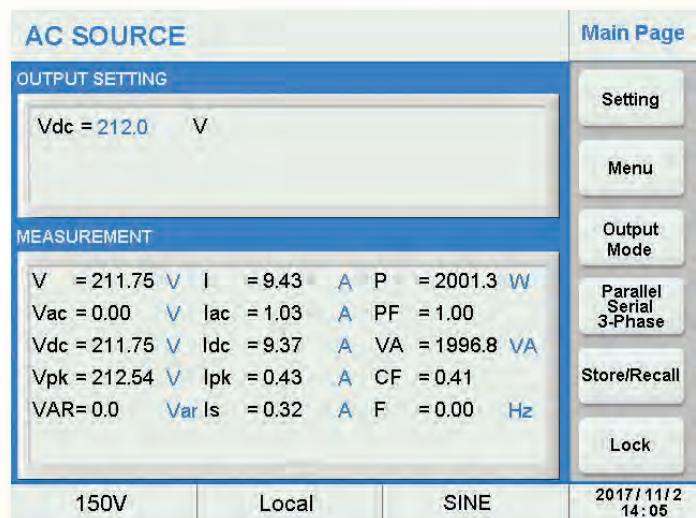
Select AC, DC or AC+DC Coupling and V Range 150, 300 or AUTO

### AC MODE



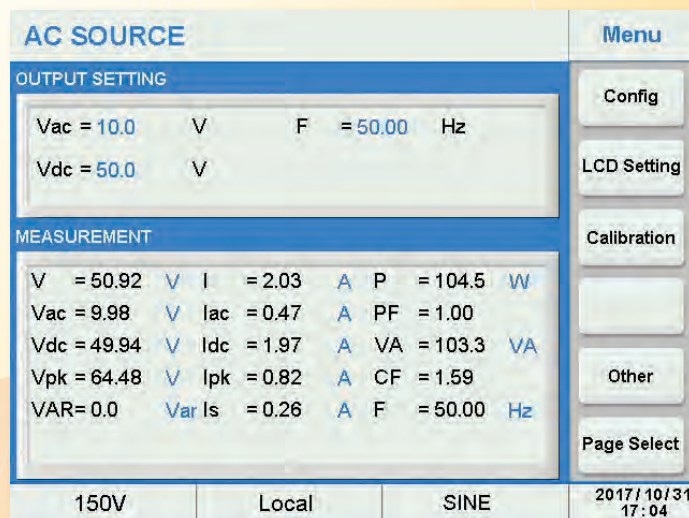
AC Voltage & Frequency Setting and Measurements

### DC MODE



DC Voltage Setting and Measurements

### AC+DC MODE



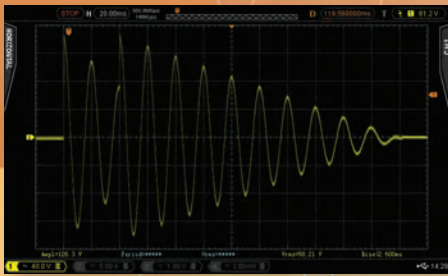
AC+DC Voltage, Frequency Setting and Measurements



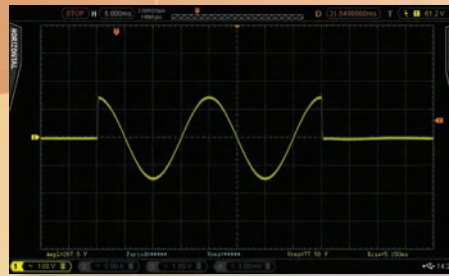
## TRANSIENT PROGRAMMING - LINE DISTORTION SIMULATION

The powerful output transient programmability offers LIST, STEP and PULSE modes to change voltage and or frequency using precise ramp and dwell times. This allows a wide range of Line Distortion conditions to be simulated with the CPS100 power sources for either AC

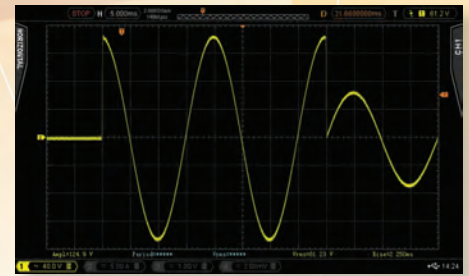
or DC power applications. For AC applications, start and stop phase angles can be programmed for each transient step as needed. Below are some AC output samples for each of the three transient modes.



TRANSIENT LIST MODE

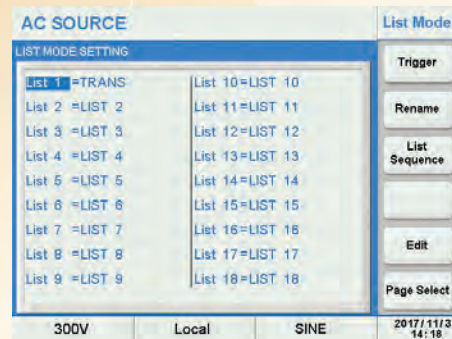


TRANSIENT PULSE MODE

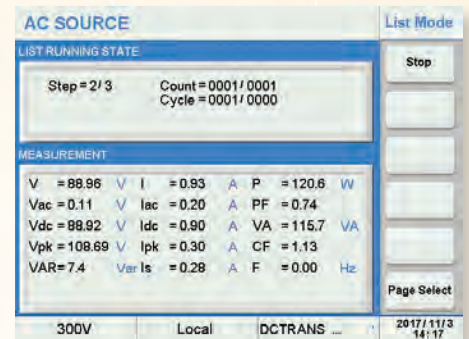


TRANSIENT STEP MODE

Transient programming is easily accomplished from the front panel. Multiple transient list can be saved to internal memory or external USB thumb drive. The LIST Selection screen and Transient RUN screen are shown to the left. During execution, the active step in each list and total steps is shown and counted down as the transient progresses.



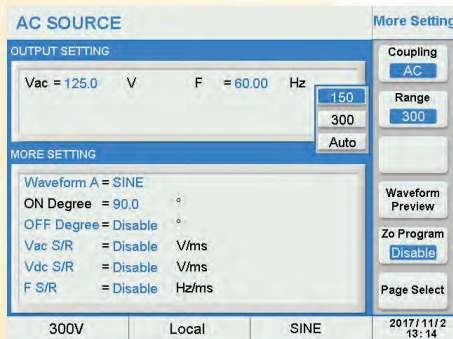
TRANSIENT LIST MODE



TRANSIENT PULSE MODE

## VOLTAGE & FREQUENCY SLEW RATES

Voltage slew rates are fully programmable for both AC and DC settings. Expressed in Volts per msec, this allows controlled voltage ramps to limit inrush current or voltage when testing specific types of loads. The same is true for frequency changes where the slew rate can be set in Hz/ms.



## INTEGRATED POWER METER

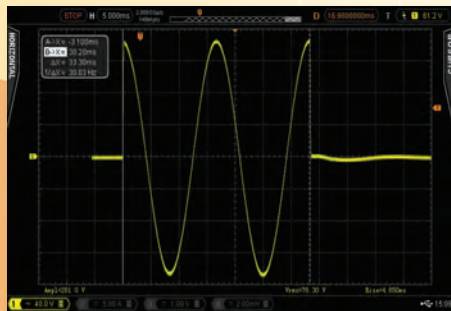
The bottom portion of each setting screen displays up to 15 measurements simultaneously. The order in which these are displayed can be rearranged if needed for best viewing.

This eliminates the need for additional metering equipment saving both time and cost.



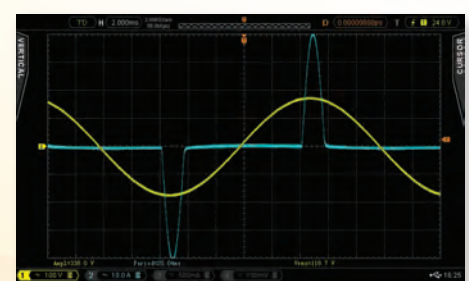
## PROGRAMMABLE PHASE ANGLES

Programmed AC voltage changes can be set to occur at any specific phase angle from 0.0° through 359.9° for precise event occurrence. The example here shows a 100Vac two cycle event started at 90° and terminated at 90° after two cycles.



## HIGH CURRENT CREST FACTOR SUPPORT

The CPS100 Series supports current crest factors up to 5 or 6 to 1. This allows proper evaluation of inrush current behavior for a wide range of real-world loads that don't have adequate inrush limiter design or non power factor corrected AC inputs.





## ENHANCED VERSION CPS100E MODELS

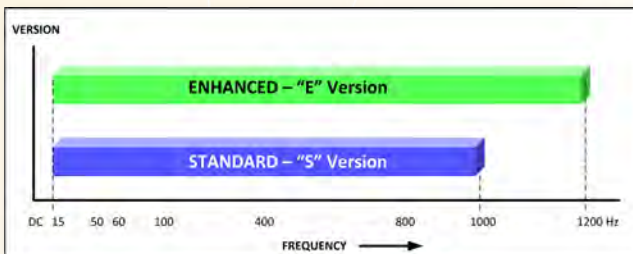
The Enhanced (E Suffix) CPS100 models offer an extensive list of additional features and capabilities compared to the standard CPS100 models. For the most demanding AC or DC power R&D or test applications, the E models represent an excellent value proposition compared to more expensive offerings from premium brands for the more discerning user.

The table on the right shows a comparison of features and functions between the Standard S model and the Enhanced E version.

The next few pages highlight some of these Enhanced functions.

## EXTENDED FREQUENCY RANGE

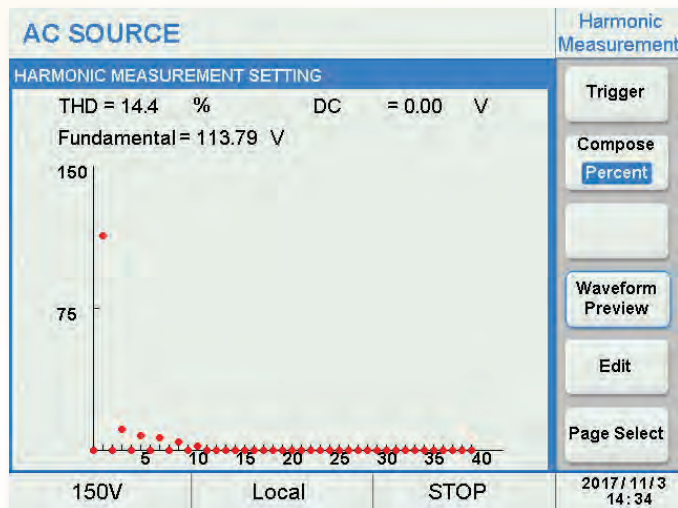
The ENHANCED models (E suffix) offer an extended frequency range to 1200Hz and improved bandwidth for enhanced harmonic waveform synthesis.



## HARMONICS & DISTORTION MEASUREMENTS

For industrial and commercial application operating at 50Hz or 60Hz utility frequencies, the Enhanced versions of the CPS100 Series support harmonics measurements up to the 40th harmonic. Individual harmonic amplitudes and phase angles with respect to the fundamental

can be displayed in absolute or relative value as either a visual bar chart or a numeric table as shown below. Harmonic measurements apply to Voltage and Current and include calculation of total harmonic distortion (THD) in % of fundamental.



Harmonic Measurements Bar Chart

AC SOURCE

Harmonic Measurement

HARMONIC MEASUREMENT SETTING

THD = 14.4 % DC = 0.00 V

Fundamental = 113.79 V

N	%	N	%	N	%
2	0.0	15	0.0	28	0.0
3	10.0	16	0.0	29	0.0
4	0.0	17	0.0	30	0.0
5	7.1	18	0.0	31	0.0
6	0.0	19	0.0	32	0.0
7	6.0	20	0.0	33	0.0
8	0.0	21	0.0	34	0.0
9	3.9	22	0.0	35	0.0
10	0.0	23	0.0	36	0.0
11	2.0	24	0.0	37	0.0
12	0.0	25	0.0	38	0.0
13	0.0	26	0.0	39	0.0
14	0.0	27	0.0	40	0.0

Stop

Compose  
Percent

Waveform  
Preview

Edit

Page Select

150V

Local

RUNNING

2017/11/3  
14:34

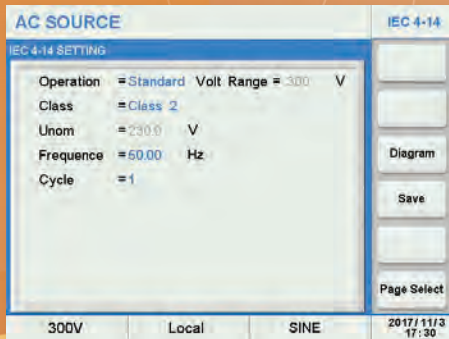
Harmonic Measurements Table Data

## MODEL FEATURES COMPARISON

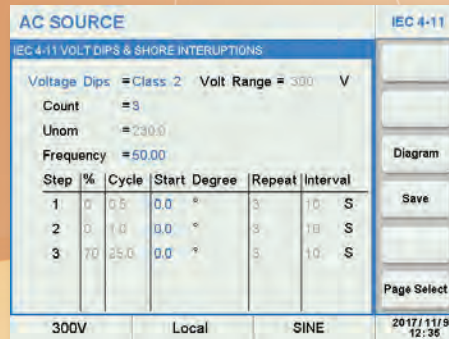
FEATURES	STANDARD (S)	ENHANCED (E)
AC Mode	●	●
DC Mode	●	●
AC+DC Mode	●	●
Frequency Range	15-1000Hz	15-1200Hz
Dual AC Voltage Ranges 150/300 Vac	●	●
Dual DC Voltage Ranges 212/425 Vdc	●	●
Arbitrary Waveforms	●	●
Waveform Synthesis from Front Panel	●	●
Transient List Mode	●	●
Measurements	●	●
Harmonic Analysis & THD		●
Programmable Impedance		●
IEC411	●	●
IEC413		●
IEC414		●
IEC428		●
Triac Function		●
LAN	●	●
USB	●	●
GPIB	option	option
RS232	●	●
RS485	●	●

Feature Comparison Table Standard versus Enhanced version models

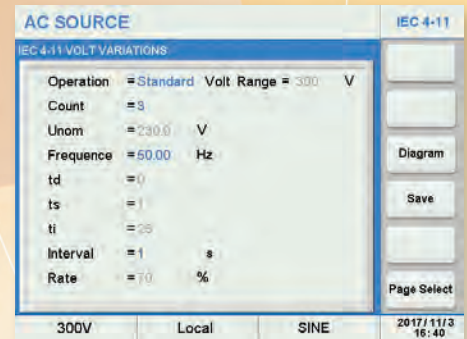
## IEC 61000-4 POWER IMMUNITY TESTS



IEC 61000-4-11 Voltage Dip Test Screen - Class 2



IEC 61000-4-11 Voltage Dips Sequence



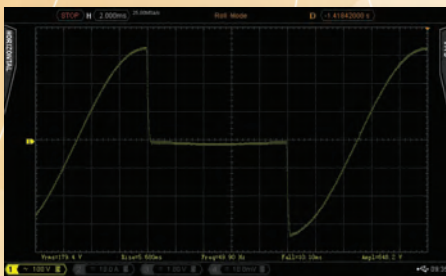
IEC 61000-4-11 Voltage Variations Setup

The ENHANCED models (E suffix) in the CPS100 Series are equipped with a complete set of IEC 61000-4 power compliance test functions. These are all related to power line immunity requirements for conformance to EU regulations for CE marking of products. This allows the user run these tests from the front panel of the power source.

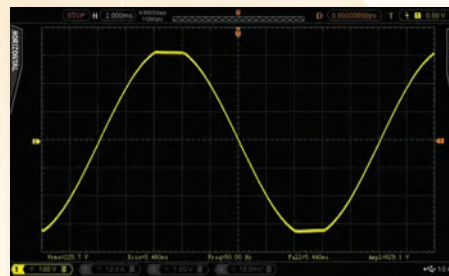
### Included Test Standards are:

- IEC 61000-4-11 Voltage Dips, Interrupts and Variations<sup>1</sup>
- IEC 61000-4-13 Harmonics and Inter harmonics
- IEC 61000-4-14 Voltage Fluctuations
- IEC 61000-4-28 Frequency Variations

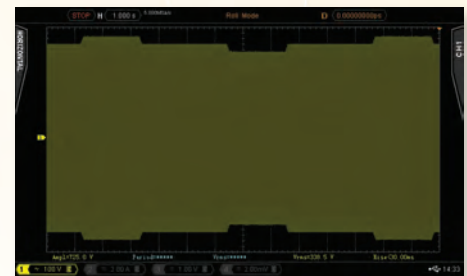
Note 1: Pre-compliance only



IEC 61000-4-11 1/2 Cycle Voltage Dip @ 90°



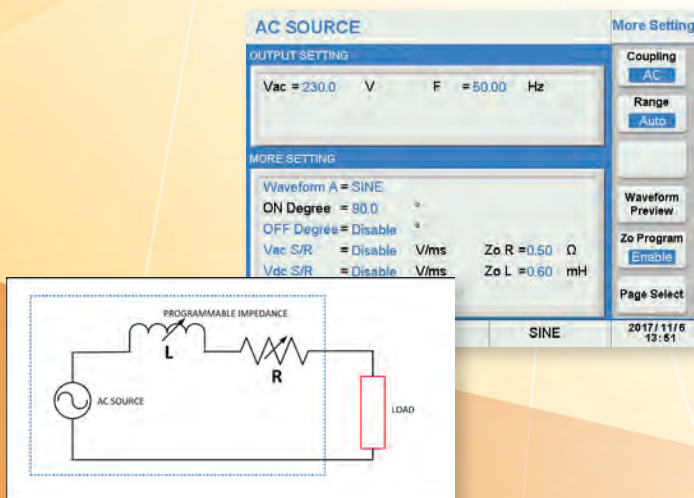
IEC 61000-4-13 Flattop Curve Test



IEC 61000-4-14 Voltage Fluctuations Test

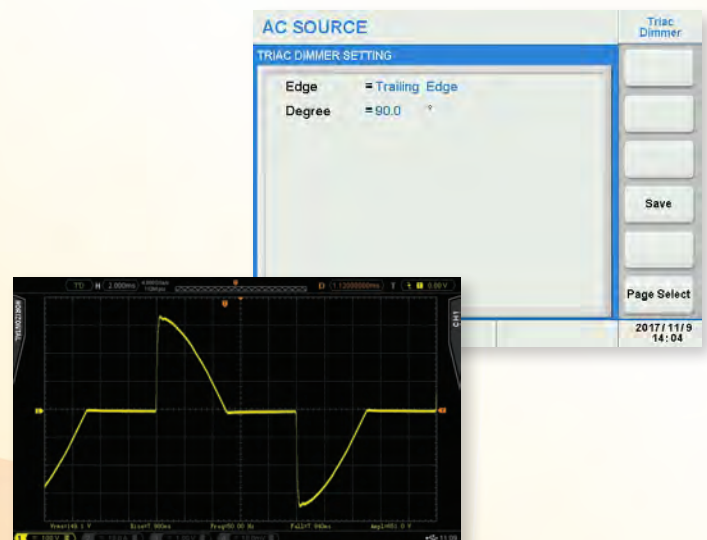
## PROGRAMMABLE OUTPUT IMPEDANCE

Programmable impedance allows for adjustment of power source output impedance by setting L and R values to simulate a specific test reference impedance. See page 8 for programmable L and R ranges.



## TRIAC MODE for LIGHTING APPLICATIONS

Built-in TRIAC light dimmer voltage waveforms allow programming of leading or lagging and firing angle for testing of LED drivers and other lighting products.

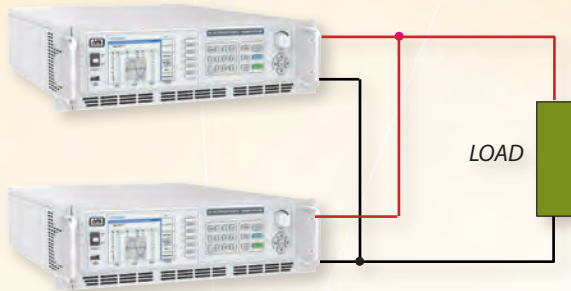




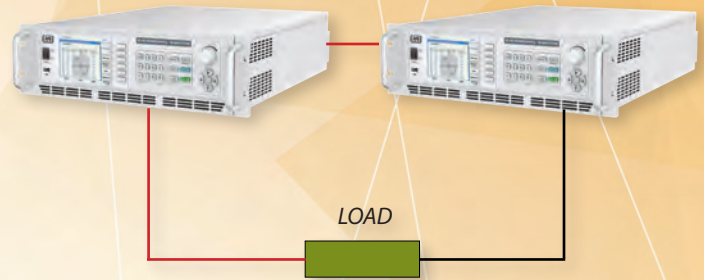
## VERSATILE MULTI-UNIT CONFIGURATIONS<sup>1</sup>

When the need for more power, higher voltage or three phase arises, configure two or more CPS100 Power Sources in either a parallel, series or multi-phase arrangement using the optional System Interface bus. This master/slave control mode is supported by all CPS100 models of 2000VA or higher and broadens the use of these power sources to a wider spectrum of applications than just a single unit does.

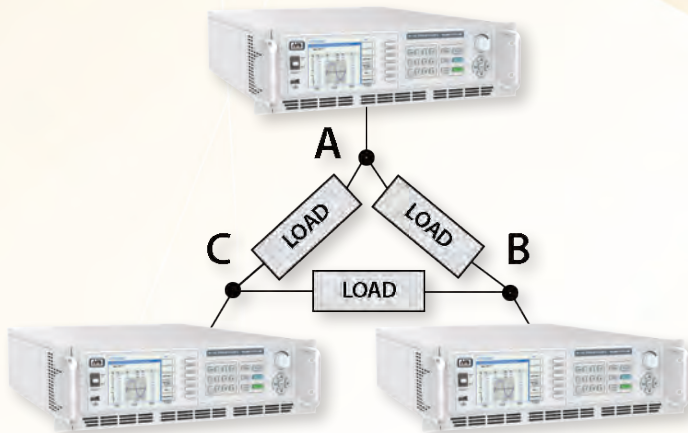
### PARALLEL MODE - MORE CURRENT



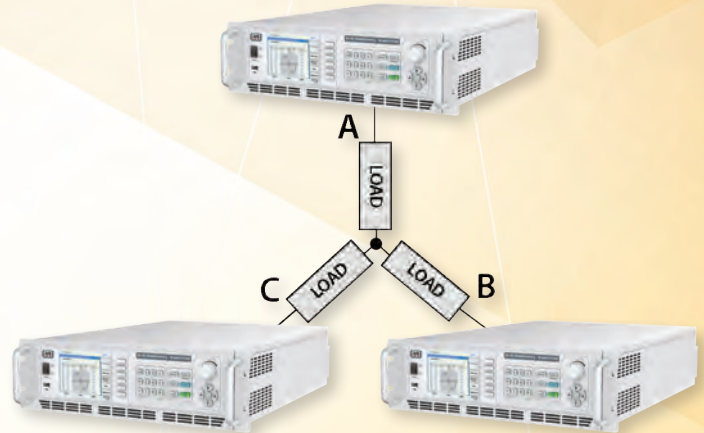
### SERIES MODE - MORE VOLTAGE



### THREE PHASE DELTA (3-WIRE) LOADS



### THREE PHASE WYE (4-WIRE) LOADS



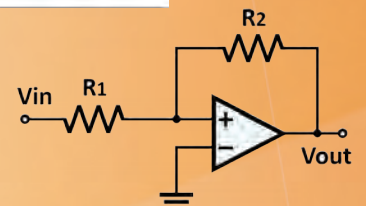
Note 1: Multi-unit operation requires the -AUX Option (Auxiliary I/O, Parallel Mode, Multi-phase mode) and is not available on CPS106, CPS110 or CPS115 Models

## EXTERNAL ANALOG INPUT

When equipped with the Auxiliary I/O option, the CPS100 power sources can be controlled using an analog input signal or a DC voltage reference. This analog input BNC has three selectable modes of operation:

- **ANALOG:** External AC or DC input signal is amplified and summed with internal voltage setting.
- **RMS:** External DC voltage input is used to determine AC RMS output level.
- **SET:** Output voltage is linearly proportional to external AC or DC input voltage.

The external analog input must be Enabled for use. Input voltage range is  $\pm 10\text{Vpk}$  or  $0-10\text{Vdc}$ . The BNC input can also be configured as a SYNC input to synchronize the power source to an external clock.



## TECHNICAL SPECIFICATIONS

MODEL		CPS106	CPS110	CPS115	CPS120	CPS130	CPS140	CPS150
<b>OUTPUT POWER &amp; CURRENT SPECIFICATIONS</b>								
Power Rating (VA/W)		600	1000	1500	2000	3000	4000	5000
AC Current (Aac)	150V Range	5.6	9.2	13.8	16.0	27.6	32.0	46.0
	300V Range	2.8	4.6	6.9	8.0	13.8	16.0	23.0
Crest Factor		5.8 to 1	6 to 1				5 to 1	4 to 1
DC Current (Adc)	212V Range	3.96	6.5	9.76	11.3	19.6	22.6	32.6
	424V Range	1.89	3.3	4.88	5.65	9.8	11.3	16.3

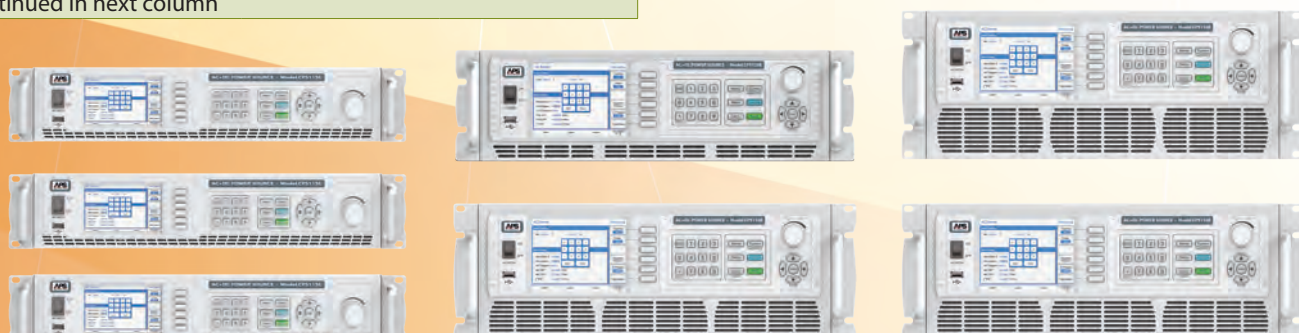
MODEL	CPS106	CPS110	CPS115	CPS120	CPS130	CPS140	CPS150
INPUT VOLTAGE & CURRENT SPECIFICATIONS							
AC Input Voltage	90 - 265 Vac		100 - 265 Vac	190 - 265 Vac, Single Phase (L, N, G)			
Phases	1 Phase, 2W+G			1 Phase, 2W+G / 2 Phase L-L + G			
Line Frequency	47 - 63 Hz			47 - 63 Hz			
Max. AC Current	10 A	15 A	19 A	14 A	20 A	25 A	30 A
Input Power Factor @ F.L.	> 0.91	> 0.95	> 0.98	> 0.98	> 0.99	> 0.99	> 0.99
Efficiency @ Full Load	80 %	84 %	86 %	86 %	85 %	86 %	86 %

MODEL		CPS106 ~ 115	CPS120 ~ 150
OUTPUT SPECIFICATIONS			
Voltage Ranges	AC Low / High	0 - 150 Vac / 0 - 300 Vac	
	DC Low / High	0 - 212 Vdc / 0 - 424 Vdc	
	Resolution	0.1 V	
	Accuracy	± ( 0.2% setting + 0.2% F.S. )	
Waveforms		Sine, THD, Harmonics, User (6)	
Frequency	Range	S Versions: 15 - 1000 Hz, E Versions: 15 - 1200 Hz	
	Resolution	0.1 Hz 15.0 - 99.9 Hz / 1 Hz 100 Hz - 1000 Hz / 5Hz 1001 Hz - 1200 Hz	
	Accuracy	± 0.1% of setting	± 0.03% of setting
Start/Stop Phase	Range	0 - 359.9°	
	Resolution	± 1° @ 45 - 65 Hz	
	Accuracy	±1%, 45- 65 Hz	
Load Regulation		± 0.1% F.S. R <sub>L</sub> , DC, 15-100 Hz	
		± 0.5% F.S. R <sub>L</sub> , 100.1-1200 Hz	
External Voltage Sense		Remote sense, Max Vdrop 5.0V	
Line Regulation		± 0.1 V	
Harmonic Distortion (THD) (Full Resistive Load)		15-70Hz: < 0.3% @ 80-140Vac in Low Range, @ 160-280Vac in High Range	
		70.1-500Hz: < 1% @ 80-140Vac in Low Range, @ 160-280Vac in High Range	
		501-1000Hz: < 1% @ 100-140Vac in Low Range, @ 160-280Vac in High Range	
		1001-1200Hz: < 2% @ 100-140Vac in Low Range, @ 160-280Vac in High Range	
Ripple & Noise (rms)		L: < 700 mVrms @ 20Hz-1MHz BW	
		H: < 1100 mVrms @ 20Hz-1MHz BW	
Continued in next column			

<b>OUTPUT SPECIFICATIONS (Continued)</b>		
Ripple & Noise (peak)		< 4000mVpp @ 20Hz-1MHz BW
Voltage Rise / Fall time		< 180 usec
Over Current Fold-back	Resolution	0.01 A
	Accuracy	± ( 0.5% setting + 1.0% F.S. )
	Response	< 1400 msec

MODEL		All
PROGRAMMABLE FUNCTIONS		
Transients (Available from 15- 70Hz)	Modes	List, Pulse, Step
	Parameters	AC Voltage, Frequency, DC Voltage, Current, Start Phase, Stop Phase
	Timing	Transition Time: 0.0 - 66.5 ms Resolution: 0.1 sec Transient Count: 0 - 9999
Test Mode		Pass/Fail based on Measurements

MODEL		Enhanced (E) Versions Only
PROGRAMMABLE IMPEDANCE		
Range	Resistance	0 Ω - 1 Ω
	Inductance	200 uH - 1 mH
Note:		Available only on E version models
HARMONICS & INTER HARMONICS		
Range		15 Hz - 2400 Hz
Waveform Synthesis		2 - 40 Harmonics @ 50 Hz or 60 Hz
HARMONIC & THD MEASUREMENTS		
Parameters		Voltage, Current
Harmonic Measurements		2 - 40 Harmonics @ 50Hz or 60 Hz
THD %		Calculated





## TECHNICAL SPECIFICATIONS (Continued...)

MODEL		CPS106	CPS110	CPS115	CPS120	CPS130	CPS140	CPS150
<b>CURRENT &amp; POWER MEASUREMENTS</b>								
Current RMS (Arms)	High Range	0.15 - 5.6 A	0.15 - 9.2 A	0.15 - 13.8 A	0.15 - 20.0 A	0.3 - 27.6 A	0.3 - 32 A	0.3 - 46 A
	Med. Range	-	-	-	-	0.2 - 20 A	0.2 - 20 A	0.2 - 20 A
	Low Range	0.1 - 2.8 A	0.1 - 4.6 A	0.1 - 6.9 A	0.1 - 5 A	0.1 - 5 A	0.1 - 5 A	0.1 - 5 A
	mA Range	-	-	-	0.02 - 1.5 A	0.02 - 1.5 A	0.02 - 1.5 A	0.02 - 1.5 A
	Resolution	0.01 A						
Peak Curr. (A)	Accuracy	H/M: $\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$ L/mA: $\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$			H/M: $\pm (0.4\% \text{ setting} + 1.5\% \text{ F.S.})$ L/mA: $\pm (0.4\% \text{ setting} + 1.2\% \text{ F.S.})$		H/M: $\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$ L/mA: $\pm (0.4\% \text{ setting} + 1.5\% \text{ F.S.})$	
	Range	0 - 32.4 A	0 - 81.5 A	0 - 81.5 A	0 - 81.5 A	0 - 168.6 A	0.05 - 163 A	0.05 - 188 A
	Resolution	0.01 A						
Power (Watts)	Accuracy	H/M: $\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$ L/mA: $\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$						
	Range	0-612 W	0 - 1020 W	0 - 1530 W	0 - 2040 W	0 - 3060 W	0 - 4080 W	0 - 5100 W
	Resolution	0.1 W						
App. Power (VA)	Accuracy	$\pm (0.4\% \text{ setting} + 1.0\% \text{ F.S.})$ @ PF > 0.2 and Voltage > 5.0 V						
	Range	0-612 VA	0 - 1020 VA	0 - 1530 VA	0 - 2040 VA	0 - 3060 VA	0 - 4080 VA	0 - 5100 VA
	Resolution	0.1 VA						
Reactive Power (VAR)	Accuracy	Calculated, $V_{rms} * I_{rms}$						
	Range	0-612 VAR	0 - 1020 VAR	0 - 1530 VAR	0 - 2040 VAR	0 - 3060 VAR	0 - 4080 VAR	0 - 5100 VAR
	Resolution	0.1 VAR						
	Accuracy	Calculated, $\sqrt{(VA^2 - W^2)}$						

MODEL		All Models
<b>MEASUREMENT SPECIFICATIONS-V, F, P</b>		
Voltage	AC Range	0 - 300 Vac
	DC Range	0 - 424 Vdc
	Resolution	0.1 V
	Accuracy	$\pm (0.2\% \text{ setting} + 0.2\% \text{ F.S.})$
Frequency	Range	S Version: 15 - 1000 Hz, E Version: 15 - 1200 Hz
	Resolution	0.1 Hz 15.0 - 99.9 Hz 1 Hz 100 Hz - 1000 Hz 5 Hz 1001 Hz - 1200 Hz
	Accuracy	$\pm 0.1\% \text{ of setting}$
	Range	0.00 - 1.00
Power Factor	Resolution	0.01
	Accuracy	Calculated W/VA

MODEL		All Models
<b>TEST MODE PARAMETERS</b>		
Memories	1 through 50	
Steps / Memory	1 through 9	
Memory Cycling	0 - 9999, 0 = Cont., 1 = OFF	
Test Limits	Frequency, Current Hi/Lo, Power Hi/Lo, App. Power Hi/Lo, PF Hi/Lo	
Ramp Up or Down	0.0 - 999.9	
Delay	0.5 - 999.9	
Dwell	0.5 - 999.9	
Step Cycles	0 - 9999, 0 = Cont., 1 = OFF	
Connect	ON, OFF	
Surge / Drop Voltage	ON: Start 0-20ms, Duration 0-20ms OFF: Start 0-99ms, Duration 0-99ms	

MODEL		CPS106 ~ 115	CPS120 ~ 150
<b>SYSTEM PARAMETERS</b>			
Display	5.6" Color Touch 640 x 480		4.3" Color Touch 640 x 480
Data Entry Modes	Soft Keys, Numeric Keypad, Shuttle, USB stick		
Output Protection	OCP, OVP, OTP, RCP		
AC Input Protection	PRI-UVP, PRI_OTP, PRI_OCP		
Control Interfaces (std).	USB, RS232, RS485 (A/B)		USB, RS232 RS485 (A/B), LAN
Optional Interface	GPIB		LAN + GPIB

MODEL	CPS106	CPS110	CPS115
AUX I/O (Option)			
DIGITAL I/O			
TTL Inputs	Output ON/OFF, KEEP OFF, RESET, RECALL SETUP 1-7 (3 bits)		
Relay Contacts	3 sets, PASS, FAIL (contact closure)		
Connector Type	20 Position dual row compression		
ANALOG			
Voltage Input	Modes: SYNC or ANALOG, RMS. SET		
Connector Type	BNC		

MODEL		CPS120, CPS130, CPS140, CPS150
AUX I/O (Option)		
Same as for CPS106 ~ CPS115 and adds:		
Relay Contacts		Adds 1 set
System Interface Bus		
Modes	Parallel	4 units max. for higher power
	Series	2 units max. for 600V output
	Three Phase	3 units in Delta or Wye Configuration



## TECHNICAL SPECIFICATIONS (Continued...)

MODEL	CPS106	CPS110	CPS115	CPS120	CPS130	CPS140	CPS150
MECHANICAL & ENVIRONMENTAL SPECIFICATIONS							
Dimensions (W x H x D)	432 x 87 x 520 mm			432 x 133 x 520 mm	432 x 177 x 520 mm		
	17" x 3.425" x 20.5"			17" x 5.24" x 20.5"	17" x 7" x 20.5"		
Shipping Size (W x H x D)	744 x 241 x 594 mm			597 x 276 x 694 mm	597 x 321 x 694 mm		
	29.3" x 9.5" x 23.4"			23.5" x 10.9" x 27.3"	23.5" x 12.6" x 27.3"		
Rack Mount	Width w/Handles & Rack Ear Kit = 483 mm / 19". Shelf or L-Bracket Support Required						
Weight	Net	15.9 Kg / 35 lbs		21Kg / 47.2 lbs		29 Kg / 63.9 lbs	
	Shipping	19 Kg / 42 lbs		24.4Kg/53.8lbs		32 Kg / 70.5 lbs	
Operating Environment							
Temperature	Operating	0° to 40° C / 32° to 104° F					
	Storage	-40° to 85° C / -40° to 185° F					
Fan Cooled	Temperature controlled. Front intake rear exhaust. Fan noise 73 dBA at max. fan speed						
Temperature Coefficient	Voltage: 100ppm/°C, Current: 300ppm/°C, Frequency: 100ppm/°C						
Rel. Humidity	5% to 95% non-condensing						
Altitude	Operating	2000 m / 6550 feet					

MODEL	All Models
<b>REGULATORY COMPLIANCE</b>	
Emissions	CE marked per EMC Directive 2014/30/EU/EN61326-1:2013 Class A for emissions and immunity as required for CE Mark. FCC verification for conformity for CFR 74 Part 15 of FCC rules
Safety	CE marked per LVD Directive 2014/35/EU/EN61010-1, third edition as required for CE Mark
CE Mark	Installation Over voltage Category II, Pollution Degree 2, Class II Equipment, indoor use only
UL Listing	CSA NRTL certified for US and Canada to CAN/CSA-22.2 No. 61010-1-12, UL 61010-1 Third Edition
Isolation Voltage	3000Vac Input to Output, 1500Vac Input to Chassis
RoHS	Meets EU Directive 2011/65/EU for restriction of hazardous substances in Electrical and Electronic Equipment

## MODEL FEATURES COMPARISON

FEATURES	STANDARD (S)	ENHANCED (E)
AC Mode	●	●
DC Mode	●	●
AC+DC Mode	●	●
Frequency Range	15-1000Hz	15-1200Hz
Dual AC Voltage Ranges 150/300 Vac	●	●
Dual DC Voltage Ranges 212/425 Vdc	●	●
Arbitrary Waveforms	●	●
Waveform Synthesis from Front Panel	●	●
Transient List Mode	●	●
Measurements	●	●
Harmonic Analysis & THD		●
Programmable Impedance		●
IEC411	●	●
IEC413		●
IEC414		●
IEC428		●
Triac Function		●
LAN	●	●
USB	●	●
GPIB	option	option
RS232	●	●
RS485	●	●

## SHIP KIT CONTENTS

ITEMS INCLUDED	QTY
Rack mount Handles (removable)	2
Output Terminals Safety Cover	1
Input Terminals Safety Cover	1
Screws to install Rack mount Handles	12
RS232 Serial Cable, 1 meter	1
LAN Cat-5 Cable, 1 meter	1
USB Cable, 1 meter	1
Option -GPIB / LAN+GPIB, GPIB Cable	1
Option - AUX, DVI Cable	1
Option -EXT, BNC Cable	1



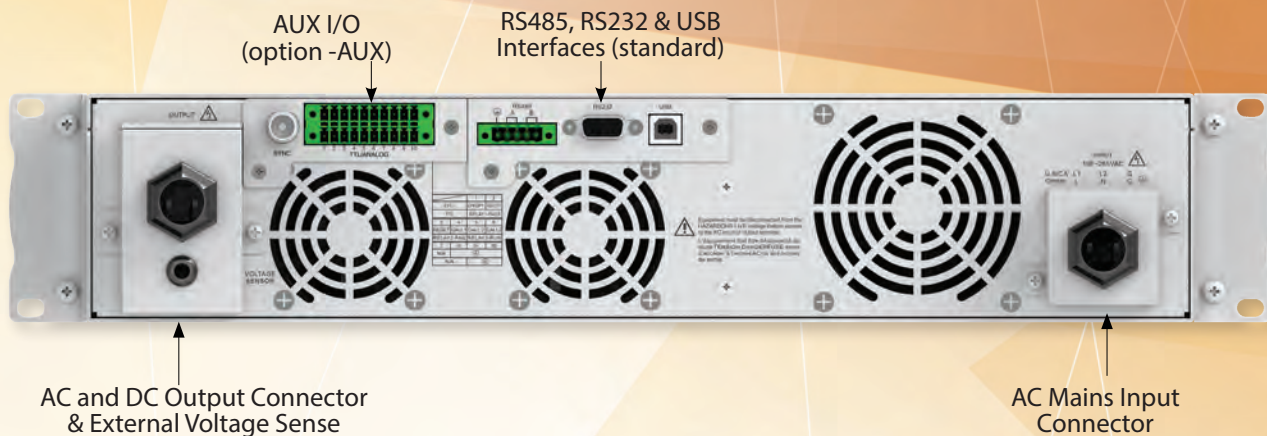


## Rear Panel Connectors

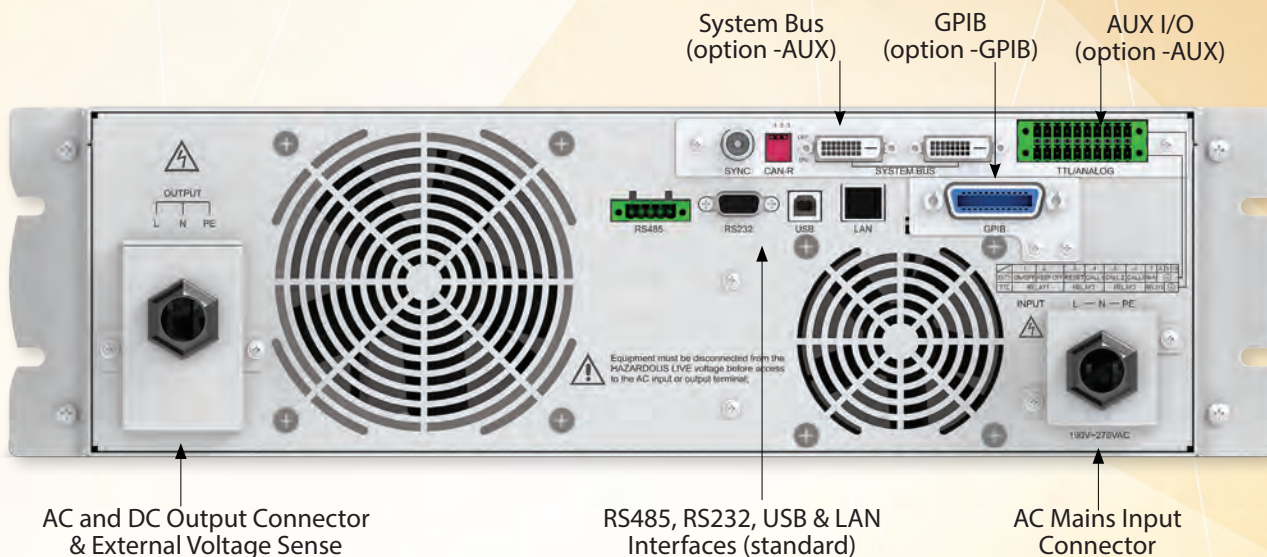
**All input power and load connections** are made at the rear panel. AC or DC output is available on the same output terminal connector. Safety covers for AC input and AC/DC output connectors are included with each unit.

Digital remote control interfaces are also located on the rear panel. Installed options provide additional connectors.

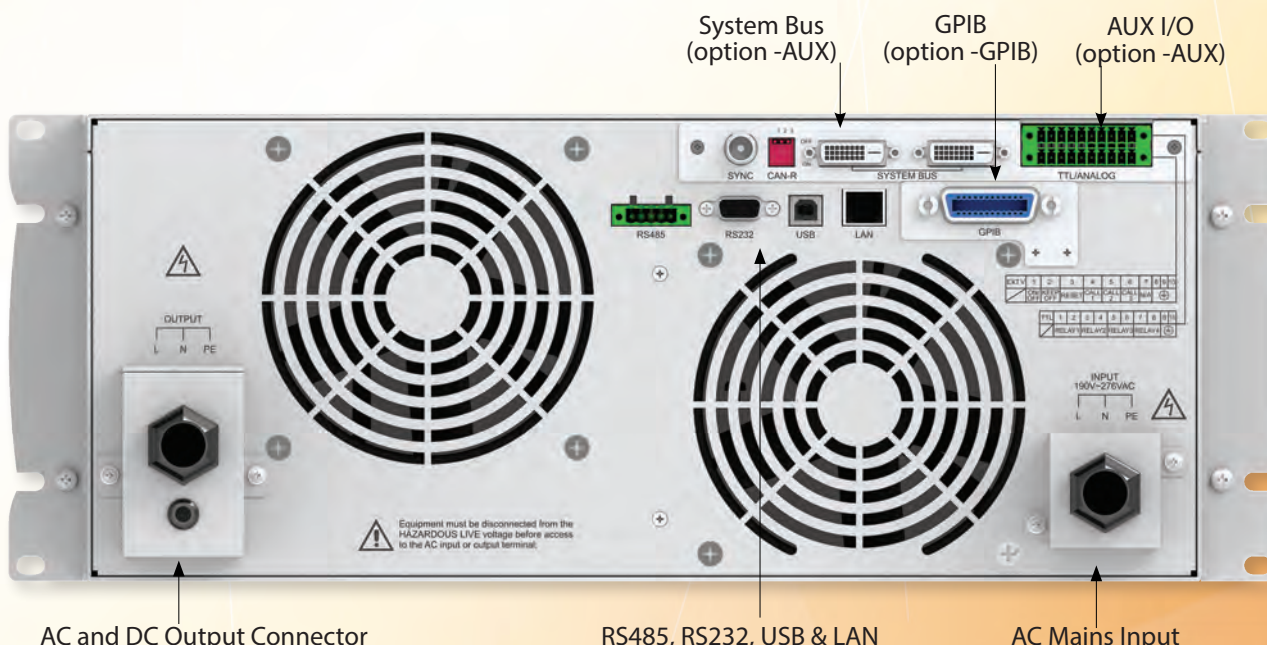
2U



3U



4U





## ORDERING INFORMATION

STANDARD MODELS	DESCRIPTION	AC INPUT	RACK HEIGHT
CPS106S	AC&DC Power Source, 600VA, USB/RS232/RS485	90 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS110S	AC&DC Power Source, 1000VA, USB/RS232/RS485	90 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS115S	AC&DC Power Source, 1500VA, USB/RS232/RS485	100 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS120S	AC&DC Power Source, 2000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	3U / 5.25" / 133 mm
CPS130S	AC&DC Power Source, 3000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm
CPS140S	AC&DC Power Source, 4000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm
CPS150S	AC&DC Power Source, 5000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm

ENHANCED MODELS	DESCRIPTION	AC INPUT	RACK HEIGHT
CPS106E	AC&DC Power Source, 600VA, USB/RS232/RS485	90 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS110E	AC&DC Power Source, 1000VA, USB/RS232/RS485	90 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS115E	AC&DC Power Source, 1500VA, USB/RS232/RS485	100 - 265 Vac, 1ø	2U / 3.5" / 89 mm
CPS120E	AC&DC Power Source, 2000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	3U / 5.25" / 133 mm
CPS130E	AC&DC Power Source, 3000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm
CPS140E	AC&DC Power Source, 4000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm
CPS150E	AC&DC Power Source, 5000VA, USB/RS232/RS485/LAN	190 - 265 Vac, 1ø	4U / 7.0" / 178 mm

OPTIONS	DESCRIPTION	COMPATIBLE WITH MODELS
-LAN+GPIB	LAN and GPIB Interface. (Replaces standard interfaces)	CPS106, CPS110, CPS115
-GPIB	GPIB Interface	CPS120, CPS130, CPS140, CPS150
-EXT	External Input & Auxiliary I/O	CPS106, CPS110, CPS115
-AUX	Auxiliary I/O, Series, Parallel & Multi-phase mode	CPS120, CPS130, CPS140, CPS150



CPS100 2U Model shown with Optional LAN+GPIB Interface