

1000 VA  
1500 VA  
1800 VA

15-1200 Hz  
150/300 VAC



## Standard Features:

- Single Phase, Dual Range 150/300 VAC Output
- 15 to 1200 Hz. Full Power Operation – 5000 Hz small signal bandwidth
- Universal (115-240V, 1Ø, 50/60Hz.) PFC input with inrush current limiting
- 10A Universal Front Panel Output Receptacle and 20A Rated Rear Panel Output Terminals
- Precision Voltage Programming – 0.05% with Continuous Self-Calibration (CSC) engaged
- True-RMS metering of volts, amps, and power
- GPIB (IEEE-488.2) or RS-232 Interface
- Waveform Library – Arbitrary Waveform Generator
- Transient Programming
- 99 stored programs with associated transients for static and dynamic test applications
- UPC Studio Software Suite

## Available options:

- GPIB (IEEE-488.2) Interface
- Harmonic Analysis and Waveform Synthesis
- Peak Inrush Capture
- Country Specific AC Input Line Cord

## UPC Manager Software Suite

*Master the Power of the Wave!*

UPC Manager Software gives you the tools necessary to quickly and easily operate your AC Power Source. With our intuitive graphical interface, control all areas of AC Power Source testing with simple presets, user prompts, test sequences, test plans and custom reports.



## ACX Series

The ACX-Series consist of three compact, single-phase programmable AC power sources spanning a power output range from 1000VA to 1800VA. The 1800VA capable 118ACX represents one of the highest power density AC power sources available. All ACX models offer low acoustic noise levels, ease of installation and a wide range of features. Using state-of-the-art, high frequency, pulse-width-modulated (PWM) power conversion technology, ACX models offer a terrific value.

Convenient to operate from the front panel keypad or remote interface, the ACX Series models are ideal for AC Power simulation, automated testing, frequency conversion, laboratory, and bench-top power applications.

### AC TEST POWER

All ACX models are equipped with a powerful micro-controller with the ability to operate as a fully integrated test system. They can supply a variety of power conditions and transients to the device under test while metering and analyzing all output performance parameters.

### FREQUENCY/VOLTAGE CONVERSION

The ACX models are excellent sources of stable AC Voltage over a frequency range of 15 to 1200 Hz. The output frequency is quartz-crystal stabilized. Output voltages up to 300 Vrms are supported.

### UNIVERSAL PFC INPUT

Worldwide input voltages and power frequencies are accommodated by the wide range, power-factor-corrected (PFC), input power supply. Inrush current limiting permits operation in laboratories with soft or limited input service. Compliance to CE, CSA, and UL test standards adds confidence to the design and allows the product to be shipped anywhere in the world.

### UPC1 CONTROLLER

The ACX Series provides the same advanced features as found in higher power Pacific Power Source models. Providing both manual and programmable control, the ACX is fully compatible with Pacific's UPC Studio and UPC Test Manager software.

## The Leader in AC Power Technology

An early pioneer in the development of solid-state power conversion equipment, Pacific Power Source continues to develop, manufacture, and market both linear and high-performance PWM AC Power Sources. Pacific's reputation as a market and technology leader is best demonstrated by its continuing investments in both research and development and world-wide customer support. With corporate owned offices in the United States, Germany, the United Kingdom and China, local personalized support is always nearby.



THE POWER OF EXPERTISE



FREQUENCY CONVERSION



AEROSPACE



R & D



MILITARY



MANUFACTURING



CUSTOM

## Output Ratings by Model

| MODEL       | Rated Power <sup>1</sup><br>(VA) | Voltage Max <sup>2</sup><br>(Vrms I-n/I-l) | Current <sup>3</sup> (Rated / Max. Arms) |            | Output Frequency (Hz) |
|-------------|----------------------------------|--------------------------------------------|------------------------------------------|------------|-----------------------|
|             |                                  |                                            | 150V Range                               | 300V Range |                       |
| 110ACX-UPC1 | 1000                             | 0-150 / 0-300                              | 11 / 16.5                                | 5.5 / 8    | 15.00 - 1200          |
| 115ACX-UPC1 | 1500                             |                                            | 16 / 24                                  | 8 / 12     |                       |
| 118ACX-UPC1 | 1800                             |                                            | 20 / 30                                  | 10 / 15    |                       |

**NOTES:**

- Rated output power is based on a combination of nominal output voltage, rated current and load power factor.
- Vmax is maximum RMS output voltage with full rated load applied.
- Available current will vary with output voltage and power factor. See "Output Rating Charts" below. Values shown in table are Rated RMS Current and absolute maximum RMS Current.

## Output Specifications (applies to all ACX Models)

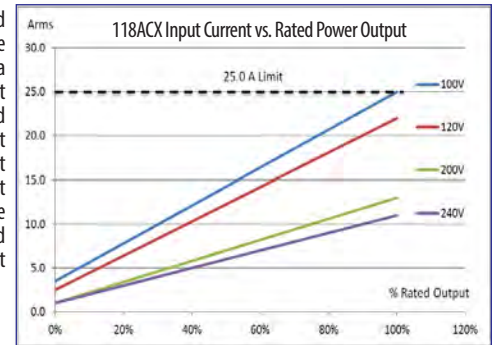
|                                                          |                                        |                                                                                                                         |
|----------------------------------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>VOLTAGE</b>                                           | Range<br>Resolution<br>Accuracy        | 0 - 150 / 0 - 300 Vac<br>0.1 Vac<br>± 0.05% of command voltage<br>referenced to internal voltmeter<br>with CSC engaged. |
| <b>LOAD REGULATION</b>                                   | 15-200Hz<br>200-800Hz<br>800-1200Hz    | < 1.5 % (Improves to < 0.1% F.S.<br>with external sense and<br>CSC' engaged)<br>< 2.0 %<br>< 3.5%                       |
| <b>VOLTAGE DISTORTION</b><br>(under full resistive load) | 15-200Hz<br>200-800Hz<br>800-1200Hz    | < 0.25%<br>< 0.50%<br>< 1.00%                                                                                           |
| <b>FREQUENCY</b>                                         | Range<br>Resolution<br>Accuracy        | 15 to 1200 Hz<br>4 digits<br>± 0.01%                                                                                    |
| <b>PEAK CURRENT</b>                                      | Max.                                   | 2x Rated Irms.                                                                                                          |
| <b>RESPONSE TIME</b>                                     | 80 uSec. typical for 10%-90% Load Step |                                                                                                                         |

Note 1: CSC = Continuous Self-Calibration. Provides for improved output accuracy by using internal voltmeter as a reference to adjust output voltage to obtain set voltage.

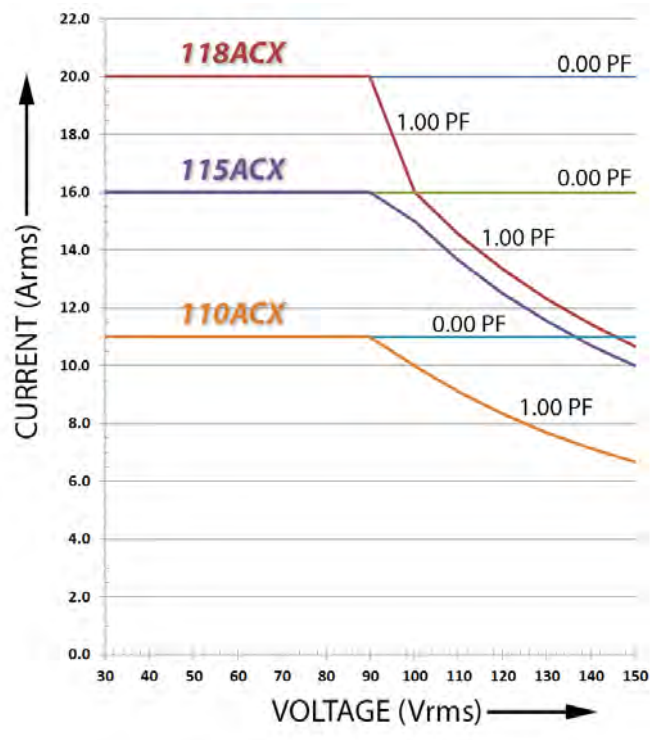
## AC Input Specifications

|                                        |                                         |                                                                           |
|----------------------------------------|-----------------------------------------|---------------------------------------------------------------------------|
| <b>INPUT VOLTAGE</b>                   | 1 Phase, 115 - 240 VAC ±10%             |                                                                           |
| <b>INPUT FREQUENCY</b>                 | 47 - 63 Hz                              |                                                                           |
| <b>CURRENT</b><br>(@ Full Rated Power) | 110ACX<br>115ACX<br>118ACX              | 14A @ 120V, 7A @ 240V<br>19A @ 120V, 10A @ 240V<br>22A @ 120V, 11A @ 240V |
| <b>POWER FACTOR</b>                    | > 0.98 (Active Power Factor Correction) |                                                                           |

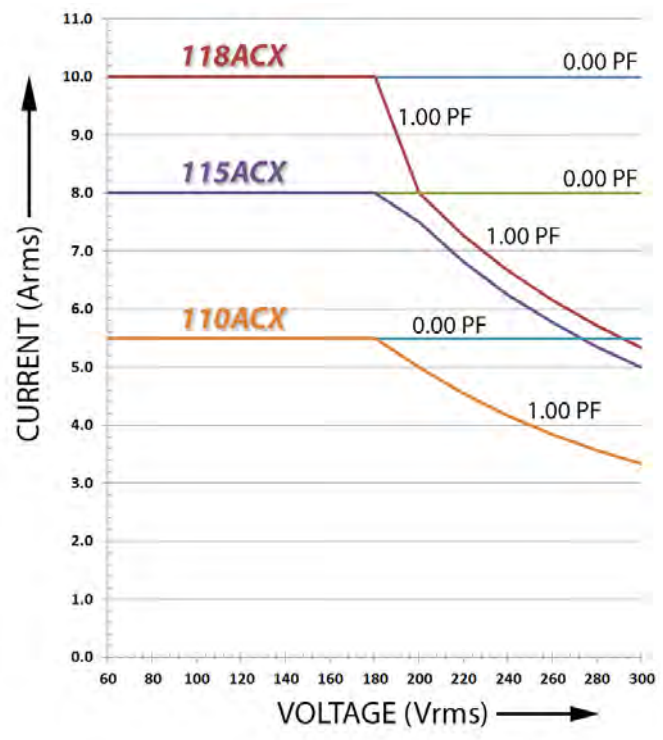
ACX units are equipped with a 30A, single phase Input circuit breaker and a 25A electronic input current limit. Input current demand will vary with model, input voltage and load. Care must be taken to ensure that load on the power source does not cause it to demand more input current than that provided by local mains.



## Output Rating Charts



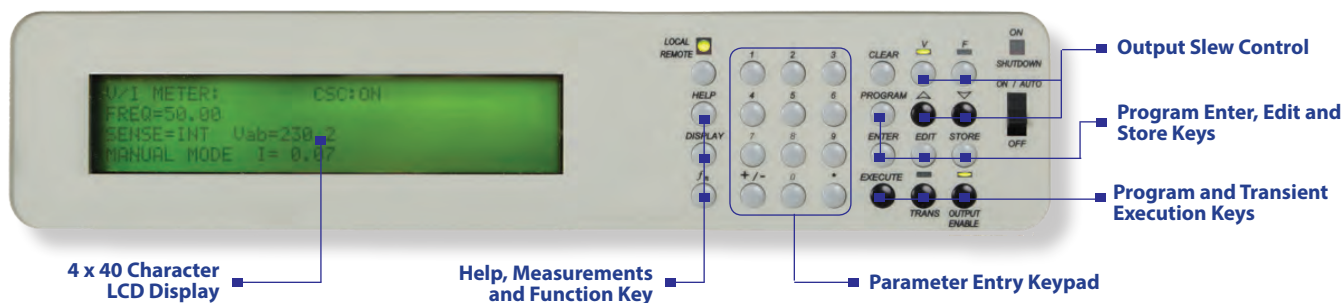
LOW VOLTAGE RANGE



HIGH VOLTAGE RANGE

**NOTE:** Rated continuous load current as a function of Power Factor and Output Voltage – Nominal Input Line. Short term overloads to 120% are permitted. Operating time before thermal shutdown or circuit breaker trip will vary from seconds to several minutes depending upon line and temperature conditions

## Total Control, Metering, and Analysis of AC Power - Simple, Intuitive Operation



Unlike other manufacturers' products at this price point, the ACX Series are full featured programmable AC Power Sources. **The Universal Programmable Controller (UPC)** used in the ACX not only supports frequency and voltage programming, it also supports extensive transient programming, programmable voltage and frequency slew rates, arbitrary waveform generation and a full set of measurements, **all standard**. Compare that to basic frequency capability and simple measurements on competing similarly priced AC power products.

**Front Panel operation** is made easy by the extensive keyboard and large backlit LCD display. All ACX models provide for selection of voltage range, voltage, and frequency.

Equipped with RS-232 Interface standard, GPIB is an available option. Commands are structured in accordance with SCPI (Standard Commands for Programmable Instruments) for easy of integration into ATE Systems.

### UPC Controller Functions

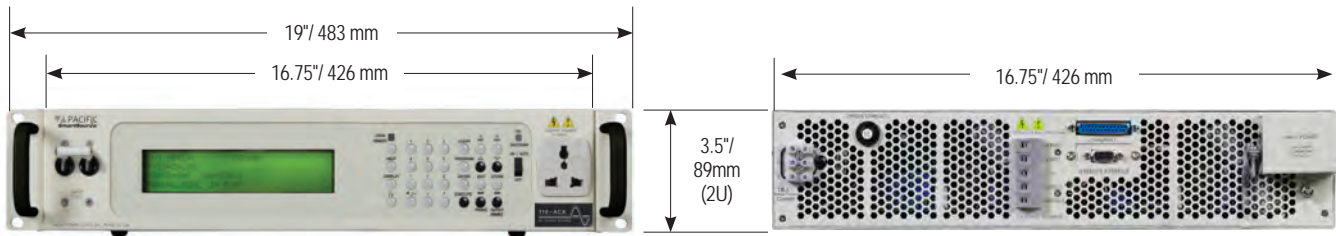
|                                        |                                                                                                                        |                                                                                                                              |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>PROGRAMMING</b>                     | Voltage, Frequency, Current Limit, Waveform                                                                            |                                                                                                                              |
| <b>VOLTAGE SENSE</b>                   | Selectable Internal or External                                                                                        |                                                                                                                              |
| <b>CURRENT LIMIT</b>                   | CC Mode and CV Mode                                                                                                    |                                                                                                                              |
| <b>Constant Current Mode (CC)</b>      | Range<br>Resolution<br>Accuracy                                                                                        | 0.1 - 50 Arms<br>0.025 A<br>± 3.0% F.S.                                                                                      |
| <b>Constant Voltage Mode (CV)</b>      | Range<br>Resolution<br>Accuracy                                                                                        | 0.1 - 50 Arms<br>0.025 A<br>± 3.0% F.S.                                                                                      |
| <b>Programmable CV Trip Delay</b>      | Range<br>Resolution<br>Accuracy                                                                                        | 0.1 sec - 109.22 mins<br>0.01 sec<br>± 0.01 sec                                                                              |
| <b>WAVEFORMS</b>                       | Fixed<br>Arbitrary<br>Presets                                                                                          | Sine (#1)<br>21 Stored Waveforms (non-volatile)<br>Triangle (#2), Square (#3), Pulse (#4)                                    |
|                                        | Free UPC Controller software provided to create and download arbitrary waveforms using remote control interface        |                                                                                                                              |
| <b>WAVEFORM SYNTHESIS (HAS Option)</b> | Creates waveform by entering magnitude as % of fundamental and specified phase angle for 2nd through the 51st harmonic |                                                                                                                              |
| <b>TRANSIENTS</b>                      | Programs<br>Parameters                                                                                                 | 99 programs, 50 segments each (non-volatile)<br>Voltage, Waveform, Frequency, Slew Rates, Dwell Time or Cycles, Repeat Count |
| <b>REMOTE CONTROL</b>                  | Standard                                                                                                               | RS232 Serial, DB9<br>Baud Rates: 300 to 38400<br>Parity: None, Odd, Even                                                     |
|                                        | Optional                                                                                                               | GPIB, IEEE488.2                                                                                                              |

### UPC Measurements

|                                       |                                                                                                                                                                         |                                                                       |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <b>VOLTMETER</b>                      | Range<br>Resolution<br>Accuracy                                                                                                                                         | 0 -354 Vrms<br>0.1V / 0.001V Front / Remote<br>± 0.2% F.S. + Cal Ref. |
| <b>AMMETER</b>                        | Range<br>Resolution<br>Accuracy                                                                                                                                         | 50 Apeak<br>0.01A / 0.001A Display/Remote<br>± 0.2% F.S. + Cal Ref.   |
| <b>POWER METER</b>                    | Range<br>Resolution<br>Accuracy                                                                                                                                         | 10,680 W and VA<br>0.1 W / VA<br>± 1.0% F.S.                          |
| <b>POWER FACTOR</b>                   | -1.000 to +1.000                                                                                                                                                        |                                                                       |
| <b>CREST FACTOR</b>                   | 1.000 - 10.00                                                                                                                                                           |                                                                       |
| <b>VOLTAGE HARMONICS (HAS Option)</b> | Reports Voltage waveform harmonic content and phase angle relative to the fundamental for the 2nd through the 51st harmonic as Total, Odd, and Even harmonic distortion |                                                                       |
| <b>CURRENT HARMONICS (HAS Option)</b> | Reports Current waveform harmonic content and phase angle relative to the fundamental for the 2nd through the 51st harmonic as Total, Odd, and Even harmonic distortion |                                                                       |

### UPC External Analog and Digital I/O

|                             |                                                                                |
|-----------------------------|--------------------------------------------------------------------------------|
| <b>ANALOG AUX INPUT</b>     | Input summed with internal oscillator signal.<br>Aux Input to Output Gain = 35 |
| <b>AMPLITUDE MODULATION</b> | Modulation Depth ± 100% F.S.<br>Vin = ± 10Vpk (20Vpk-pk)                       |
| <b>REMOTE INHIBIT</b>       | Output Enable / Disable, Contact Closure                                       |
| <b>TRANSIENT</b>            | TTL Pedestal Output. True during Transient execution                           |
| <b>DRM CLOCK OUT</b>        | TTL Output                                                                     |
| <b>SYNC OUT</b>             | Positive Zero Crossing (0°) TTL Output                                         |



The ACX is designed for bench top or 19" equipment rack operation. Shown with provided rack mount handles.



The ACX Rear Panel provides connections for AC Input, AC Output, External Sense, I/O and RS232 or GPIB.

### General and Environmental Specifications

|                              |                                                                                            |                                |
|------------------------------|--------------------------------------------------------------------------------------------|--------------------------------|
| <b>OPERATING TEMPERATURE</b> | Full Power                                                                                 | 0° - 40° C / 32° - 104°        |
|                              | Derated                                                                                    | 0° - 55° C / 32° - 131° < 600W |
| <b>HUMIDITY</b>              | Relative                                                                                   | 0 - 95%, non-condensing        |
| <b>COOLING</b>               | Forced air cooling, 240 CFM<br>Variable fan speed control<br>Side air intake, Rear exhaust |                                |
| <b>MAX. ALTITUDE</b>         | 3000 m / 10000 feet                                                                        |                                |
| <b>ENVIROMENT</b>            | Pollution Degree 2                                                                         |                                |
| <b>REGULATORY APPROVALS</b>  | Safety                                                                                     | IEC 61010-1:2010, Ed 3         |
|                              | EMC                                                                                        | IEC 61326-1:2006               |
| <b>LISTINGS</b>              | CE Mark, NTRL CCL                                                                          |                                |

### Available Options

|                         |                                                                                         |                            |
|-------------------------|-----------------------------------------------------------------------------------------|----------------------------|
| <b>/G</b>               | GPIB Interface. (replaces RS232)                                                        |                            |
| <b>/HAS</b>             | Harmonics Analysis and Synthesis Option                                                 |                            |
| <b>/IM</b>              | EUT Inrush Current Measurement Option                                                   |                            |
| <b>Rack Slide</b>       | 790010-003 (requires 2)                                                                 |                            |
| <b>UPC STUDIO</b>       | Windows Control Software. (no charge)                                                   |                            |
| <b>UPC TEST MANAGER</b> | Test Executive License Option for UPC Studio. Required to support Test Software Options |                            |
| <b>TEST SOFTWARE</b>    | IEC-4XX                                                                                 | IEC 61000-4 AC Immunity    |
|                         | Airbus                                                                                  | ABD0100.1.8, ABD0100.1.8.1 |
|                         | Boeing                                                                                  | 787B3-0147                 |
|                         | RTCA                                                                                    | DO160G                     |
|                         | Mil-Std                                                                                 | MIL704F                    |

### Mechanical Specifications

|                               |                   |                                                                                                                        |
|-------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>DIMENSIONS</b>             | H x W x D         | 89 x 426 x 600 mm<br>3.5" x 16.75" x 23.6"<br>(Excluding rack handles and Safety covers)                               |
|                               | <b>RACK MOUNT</b> | Designed to accept slide rails for mounting in a 19" Instrument Cabinet. Rack slides can be provided as a cost option. |
| <b>WEIGHT</b>                 | Net               | 18.2 kg / 40 lbs                                                                                                       |
|                               | Shipping          | 21 kg / 47 lbs                                                                                                         |
| <b>CONNECTORS Rear Panel</b>  | Input Power       | Screw Terminal Block (L, N, G)<br>Safety cover w/ strain relief<br>(Optional regional line cords available)            |
|                               | Output Power      | Safety Terminal Block<br>(Sense1, L1, N, L2, Sense2)                                                                   |
|                               | AUX I/O           | J5, DB25                                                                                                               |
|                               | Rem. Inhibit      | Screw Terminal (1, 2, 3)                                                                                               |
| <b>CONNECTORS Front Panel</b> | Output Power      | Universal Socket<br>10A Max., Fused                                                                                    |

### Country Specific Line Cord Options

| COUNTRY            | PART NUMBER | COUNTRY        | PART NUMBER |
|--------------------|-------------|----------------|-------------|
| Argentina          | 775102      | Israel         | 775107      |
| Australia          | 775100      | Italy          | 775109      |
| Brazil             | 775101      | Switzerland    | 775105      |
| China              | 775104      | UK / Ireland   | 775110      |
| Continental Europe | 775111      | US, NEMA 5-15P | 775114      |
| Denmark            | 775106      | US, NEMA 5-20P | 775113      |
| India              | 775108      | US, NEMA 6-20P | 775112      |

### Ordering Information

|                                                                                                       |                               |                |                                                           |
|-------------------------------------------------------------------------------------------------------|-------------------------------|----------------|-----------------------------------------------------------|
| <b>Model</b>                                                                                          | <b>Controller</b>             | <b>Options</b> | <b>Input Voltage (V<sub>IN</sub>)</b>                     |
| <input type="checkbox"/> 110ACX<br><input type="checkbox"/> 115ACX<br><input type="checkbox"/> 118ACX | <input type="checkbox"/> UPC1 | See List Above | <input type="checkbox"/> 115V - 240Vac, 1Ø ± 10%, 47-63Hz |

### Available Models

110ACX-UPC1  
115ACX-UPC1  
118ACX-UPC1

### Order Example

115ACX-UPC1/G

- 1500VA, 1-Phase, AC Power Source with UPC1 programmable controller.
- Optional GPIB Interface
- 1 Phase Universal Input Voltage

### Typical Delivery Items

- AC Power Source
- English Manuals on CD ROM
- Rack Mount Kit
- UPC Studio Software - (Download)
- UPC Interactive LabVIEW™ Libraries (Download)
- Certificate of Compliance
- CE Conformity Document



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