The UMC-31 provides operational control and high quality oscillator signals for both single and three phase Power Sources.

- Obtain precision frequency and phase conversion for manufacturing and test.
- Provide high quality, general purpose lab power where test versatility is required.
- Achieve low cost and power form flexibility for power supply tests.

**Phase**
- Select single, split or three phase operation by internal jumper.
- Phase angles are fixed at 120° and 240° for three phase operation.

**Frequency**
- Select 50, 60 or 400 Hz fixed or a variable frequency mode of 45 to 500 Hz.

**Voltage**
- 0–Vmax via 10-turn potentiometer on the front panel.

**Metering**
- Autoranging Volts, Amps, and Frequency.

### Simplify and Automate

UPC Studio makes it easy and convenient to take full advantage of the advanced features installed in your Pacific AC Power Source. Whether it's a quick test of a new voltage, frequency or waveform using your 3060-MS, or the application of a new power line disturbance test using your AMX Series-based test system, UPC Studio is the answer.

#### Browse Output Sequences

UPC Studio’s Output Sequence Browser provides the ability to easily view and transfer annotated Output Sequences (programs) between the UPC Controller and the host computer.

#### Easy-To-Use UPC Studio Control Panel

UPC Studio provides quick and easy control over the basic functions of a Pacific Power AC Power Source. Presets for 50, 60 and 400 Hz are provided for most common applications. Form, Coupling, Current Limit, Voltage and Waveforms are all easily accessed from this single easy-to-use soft panel.

### The Leader in Power Technology

As a privately held, leading manufacturer of high-quality AC Power Conversion Equipment, Pacific Power Source, Inc. offers standard catalog products that range in power from 500 VA to >625 kVA. Low-power products include line conditioners, frequency converters and Programmable AC Power Sources. High-power systems include programmable power test equipment, power line conditioners, frequency converters and uninterruptible AC Power Sources.

Founded in 1971, the Irvine, California, company was an early pioneer in the development of linear solid-state power conversion for use in high-reliability applications. The company now manufactures both advanced linear and broadband switching types of AC Power Sources.

### For Application Engineering Assistance

**Contact the factory directly**

17692 Fitch, Irvine, CA 92614 USA
Call direct: +1 949-251-1800 • Fax: +1 949-756-0756
US: 800-854-2433
E-mail: sales@pacificpower.com • www.pacificpower.com

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Take Control of Your AC Test Power

The AMX Series is a family of High Performance Linear AC Power Sources covering the power range of 500 VA to 12 kVA. The product line offers both single and three phase models. Units are conservatively designed and rated output power is based on the most severe combination of input line, output voltage, power factor and temperature. This approach to product design allows the AMX Series to excel when delivering the high peak load currents demanded in the AC test environment. Great emphasis has been placed on low acoustic noise, ease of installation and maximum power per cubic inch of rack space. Control and operating features provide a high degree of application versatility and ease of use for the test engineer. Applications range from simple, manually controlled frequency conversion to harmonic testing and sophisticated bus programmable transient simulation.

Special AMX Series Operating Features

Continuous Self Calibration
Provides for exceptional accuracy of the AC output voltage. When enabled, accuracy improves to ±0.03% referenced to the power source internal voltmeter.

Programmable Dynamic Output Impedance (Optional)
Provides positive or negative output impedance. The output voltage waveform at the right is flattened as a result of a high peak load current drawn by an electronic load at the peak of the sine wave.

Engaging the output impedance (Z°) feature dynamically compensates, as shown at the right, for the distribution or transformer losses up to ±10% of the output voltage.

Waveform Library
Up to 99 different waveforms may be stored in the waveform library for execution as part of a steady state test program or for substitution in any output phase as part of a transient test program. Memory locations 1 is a non-editable high resolution sine wave. Locations 2–16 are edit-able and may be substituted in any output phase. Locations 17–99 are factory stored, non editable waveforms that may be copied to 2–16 for editing and execution.

Waveform Edit
Provides the ability to modify a stored waveform by specifying the waveform amplitude desired at each specific phase angle. This method can be used to quickly create spikes, dropouts, notches and other sub-cycle wave conditions. The resulting modified waveform can be stored for execution.

Waveform Analysis (Optional)
Provides a numeric display of the harmonic structure of a voltage or current waveform. The waveform is sampled at 512 samples per cycle using a 12-bit A/D converter. The resulting high fidelity waveform is analyzed for its harmonic structure up through the 51ST harmonic. Data presented includes the magnitude of each harmonic in percent, the total harmonic distortion, and the odd and even harmonic distortion in percent.

Waveform Synthesis (Optional)
Provides the ability to quickly create virtually any AC Test Waveform that may be required by building it out of harmonics. The process is as simple as keying in the harmonic multiple, the amplitude, and the phase angle for each desired harmonic up through the 51ST. If desired, waveforms may also be created in the time domain by making entries from the front panel or by downloading from a host PC.

Time-Based Transients
Provide the ability to create and execute, on command, transients that occur linearly over a specified time segment to modify output voltage or frequency.

Cycle-Based Transients
Provide the ability to create and execute, on command, transients that substitute a selected waveform in the output for 1 to 100 cycles.

The waveform being substituted can be selected and/or modified from the waveform library. Substitution is for an integer number of cycles, regardless of frequency.

Exceptionally Broad Bandwidth (50 kHz Small Signal) Combined with Peak/RMS Current of 4:6:1 give the AMX Series the ability to produce high quality, low distortion output power into the most dynamic loads.

Pacific Model 308AMX with UPC Controller

An exceptionally broad bandwidth (50 kHz small signal) combined with peak/RMS current of 4:6:1 give the AMX Series the ability to produce high quality, low distortion output power into the most dynamic loads.

Design Provides Total Control of AC Power

- All AMX Series Power Source models may be equipped with either a programmable Oscillator/Controller (UPC type) or a manually controlled Oscillator (UMC type).
- Single phase power source models may be controlled to operate on either a 0–135 VAC range or a 0–270 VAC range. Some models can operate to 150/300 Volts. Three phase models are switchable to 3Ø/2Ø/1Ø output power form.
- Total control of the output power form and the selection of either the direct output or the optional transformer output is available from the front panel or by computer interface.
- All operating functions may be controlled from either the front panel or from a remote RS-232 or IEEE-488.2/SCPI interface. LabVIEW for Windows® and LabWindows® Instrument Drivers are provided.

Key Features Provide Application Versatility

- IEEE-488.2 or RS-232C with SCPI compatibility.
- LabVIEW for Windows®/LabWindows® drivers.
- Waveform Creation by Harmonic Synthesis Option.
- Graphical Analysis (Voltage and Current).
- Harmonic Analysis (Voltage and Current) Option.
- Metering of RMS and Peak Values.
- Continuous Self Calibration (CSC).
- Line Sync Option.
- 6:1 Peak Current Capability.
- Low Impedance for IEC555 Testing.
- Programmable Output Impedance Option.
- Up to 0–300 VAC Direct Coupled Output.
- 1 Phase / 3 Phase Switch Selectable Output.
- 20–5,000 Hz Full Power Bandwidth.
- Power Levels from 500 VA to 12 kVA.
- Externally Referenced Meter Calibration.
- CE or ETL Mark Available.
Total Control, Metering, and Analysis of AC Power. Simple, Intuitive Operation.

**Parameter Select Keys**
- Select phase voltages and operating frequency when manual control is desired. These selected parameters are indicated by the LCD display. The clear key erases entries and keeps erasing with repeated pressing until the basic V/I screen is displayed.

**In informative 160 Character LCD Display**
- Soft green backlight.
- Adjustable.

**Special Functions Accessed Through UPC Setup Menu**
- Sense: Establishes either local or remote sense for metering and CSC.
- CSC: Continuous self-calibration – provides for exceptional voltage accuracy.
- Program 2: Programmable output impedance dynamically compensates for output transformer or line distribution losses. Can simulate a soft power grid.
- Transition Time: Permits control of the transition time when changing the output voltage and frequency.
- Frequency Limits: Sets min and max programmable frequency limits.
- Voltage Limits: Sets min and max programmable voltage limits.

**Enter Key**
- Instantly executes a stored program that has been selected with the program key.
- Slew Keys: Smoothly change the designated voltage or frequency parameters. Rates are separately programmable.
- Transient (Trans) Key: Turns time based or cycle based transients On or Off. Indicator is On when transient is executed.
- Output Enable Key: Turns the output controller of the power source On or Off. Indicator is On when the controller is closed.

**Function Key**
- Provides access to special functions.

**Execute Key**
- Stores new parameter data that has been keyed in.
- Program Key: Selects 1 of 99 programs for edit or execution.
- Edit Key: Selects the program edit mode and prompts for new entry.
- Store Key: Stores a program upon completion of editing.
- Display Key: Sequences through each metering screen:
  - V/I Meter
  - Power Meter
  - AMPs Meter
  - Waveform Analysis (option).
AMX Power Source Models

Output Form (Max. VA) 105AMX 108AMX 105AMX 108AMX 105AMX 108AMX
1Ø 3Ø 1Ø 3Ø 1Ø 3Ø

- 4000 3900 1400 1200 1200 1200
- 2500 3000 4000 4000 4000 3000
- 500 135/270 135/270 135/270 135/270 135/270 135/270
- 4000 3900 1400 1200 1200 1200
- 2500 3000 4000 4000 4000 3000
- 500 135/270 135/270 135/270 135/270 135/270 135/270
- 6400 3000 6400 3000 6400 3000
- 3Ø 3Ø 3Ø 3Ø 3Ø 3Ø

- 6000 1200 5000 1200 5000 1200
- 4500 110/Ø 4500 110/Ø 4500 110/Ø
- 48/16 48/16 48/16 48/16 48/16 48/16
- 135/105 135/105 135/105 135/105 135/105 135/105
- 12/32 12/32 12/32 12/32 12/32 12/32
- 20/10 20/10 20/10 20/10 20/10 20/10
- 135/105 135/105 135/105 135/105 135/105 135/105

- 30/32 30/32 30/32 30/32 30/32 30/32
- 3Ø 3Ø 3Ø 3Ø 3Ø 3Ø

- 20/10 20/10 20/10 20/10 20/10 20/10
- 135/105 135/105 135/105 135/105 135/105 135/105
- 12/32 12/32 12/32 12/32 12/32 12/32

- 48/16 48/16 48/16 48/16 48/16 48/16
- 135/105 135/105 135/105 135/105 135/105 135/105
- 12/32 12/32 12/32 12/32 12/32 12/32

- 20/10 20/10 20/10 20/10 20/10 20/10
- 135/105 135/105 135/105 135/105 135/105 135/105
- 12/32 12/32 12/32 12/32 12/32 12/32

- 48/16 48/16 48/16 48/16 48/16 48/16
- 135/105 135/105 135/105 135/105 135/105 135/105
- 12/32 12/32 12/32 12/32 12/32 12/32

UPC Controller Specifications

- The UPC controller is essentially a 3-phase AC arbitrary waveform generator and Precision AC Metering system. Each waveform stored in the UPC is encoded with 12-bit amplitude and 10-bit time resolution for each cycle. The waveform for each phase may be independently selected and may be independently varied in amplitude and phase angle with respect to phase A.

- The UPC output metering samples the output volts and amps at 512 samples per measurement using a 12-bit A/D converter. This technique provides exceptional metering accuracy and resolution (20 bits), and delivers a high-quality waveform back to a host computer for analysis.

- The UPC includes a remote GPIB interface compatible with EEM-488.3 and SCPI. An available option is an RS-232 serial port that operates up to 38.4 kbaud.