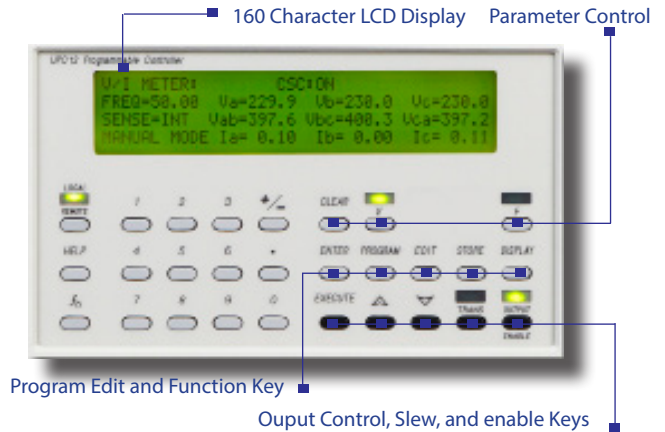


Total Control, Metering, and Analysis of AC Power- Simple, Intuitive Operation

The UPC Controller is a highly versatile one, two, or three phase oscillator/signal generator designed to control any of Pacific Power's AC Power Sources. Three controller models, UPC-1M, UPC-1, or UPC-12 are offered. To use the full 5KHz power bandwidth of the 160AMX or 160AMXT, the UPC-12 controller is required.

Using the front panel keyboard and display, all controller models provide for selection of power source output mode, coupling, voltage, and frequency. Selecting the correct UPC controller for a given application varies with your test requirement, desired features, and price.

Both the UPC-1 and UPC-12 Controllers are available with either RS-232 or GPIB remote interface. Commands are structured in accordance with SCPI (Standard Commands for Programmable Instruments).



Controller Models

Features	UPC-1M	UPC-1	UPC-12
Output Modes	1Ø & 2Ø	1Ø & 2Ø	1Ø, & 2Ø
Waveform Library	Sine	Sine + 21 Editable	Sine + 15 Editable
Transient Functions	NO	YES, 50 Steps	YES, 99 Steps
Program Library	NO	99 Programs	99 Programs
Programmable Current Limit	YES	YES	YES
Programmable Current Protect	YES	YES	YES
CSC (Continuous Self-Calibration)	YES	YES	YES
Remote Interface	Std	NONE	GPIB
	Opt	NONE	RS-232
Waveform Synthesis/Analysis	NO	OPTIONAL	OPTIONAL
Prog. Output Impedance	NO	OPTIONAL	OPTIONAL
Inrush Peak Detect	NO	OPTIONAL	NO
DRM Link-Synchronization	NO	NO	OPTIONAL
Line Synchronization	NO	NO	OPTIONAL

External Inputs/Outputs

Analog Auxiliary Input	Each phase is algebraically summed with UPC waveform and amplified 25X to the direct coupled output. ±10Vpk (20Vpk-pk). One input per phase. $Z_{IN} = 600 \Omega$
AM-Amplitude Modulation	±10 Vdc (20Vpk-pk) modulates the output voltage ±100% One input per phase. $Z_{IN} = 600 \Omega$
Sync Outputs Zero Crossing	Positive Zero Crossing (0°) of Phase A analog output
Transient Trigger	Pulse at the start of a transient event. (UPC-32 only)
Transient Pedestal	TTL True when a transient is in progress
Output Clock	UPC-1, TTL level pulse rate varies with output frequency UPC-12, TTL level 1024 x output frequency

Waveform Control

Waveform Synthesis (/HAS Option)	Creates waveform by entering magnitude as % of fundamental and specified phase angle for 2nd through the 51st harmonic
Waveform Analysis (/HAS Option)	Reports waveform harmonic content and phase angle relative to the fundamental for the 2nd through the 51st harmonic as Total, Odd, and Even harmonic distortion

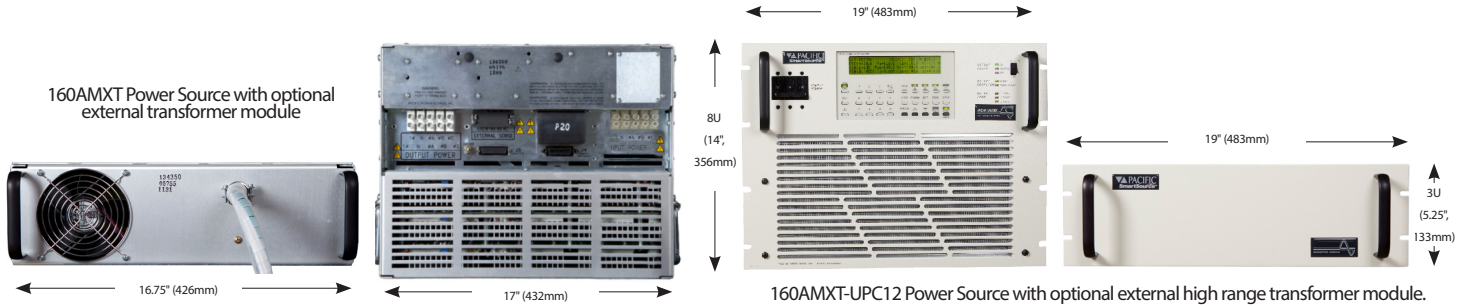
Output Control Specifications

	UPC-1M/UPC-1	UPC-12
Frequency	Range	20-1,200Hz
	Resolution	4 Significant Digits
	Accuracy	±0.01% of full scale
Voltage	Range (I-n)	0 - 150/375
	Resolution	0.1V/ 0.5V
	Accuracy	0.5% of full scale (CSC Disabled) ±0.05% referenced to Internal Meter (CSC Enabled)
Phase Angle ØB and ØC relative to ØA	Range	0 - 359°
	Resolution	± 1°
	Accuracy	15.00 - 150Hz, ± 0.5° 15.00 - 300 Hz, ± 1° 15.00 - 600 Hz, ± 2° 15.00 - 1,200Hz, ± 3°
Current Limit	Range	1Ø = 0 - 150A _{RMS} 2Ø = 0 - 50A _{RMS}
	Resolution	0.05% F.S.
	Accuracy	±3% F.S. ±1% F.S.

(1) Full power output limited to 1=5,000 Hz in AMX models

Output Metering

	UPC-1M/UPC-1	UPC-12
Voltmeter True V _{RMS} each phase	Range	0-354 V _{L-NF} 708V _{L-L}
	Resolution	0.1V front panel
	Accuracy	±0.2% F.S plus Cal ref. ±0.25% of rdg. ± 0.1% F.S. 20-5,000 Hz, ± 0.5% F.S.
Ammeter True A _{RMS} and Apk each phase	Range	1Ø = 150A _{RMS} 2Ø = 50A _{RMS}
	Resolution	0.01A front panel
	Accuracy	±0.2% F.S plus Cal ref. ±0.25% of rdg. 50-500Hz, ± 0.1% F.S. 20-5,000 Hz, ± 0.5% F.S.
Power Meter True Watts and Volt-Amps each phase	Range	1Ø = 53,100/Ø (W or VA), 2Ø = 17,700/Ø (W or VA)
	Resolution	1.0 Watt or VA front panel
	Accuracy	± 1% full range
Power Factor Ratio: kW _{mtr} /kVA _{mtr}	Resolution	Calculated and displayed to three digits following the decimal point.
	Accuracy	± 1 % full range
Crest Factor Ratio: Apk/A _{RMS}	Resolution	Calculated and displayed to three digits following the decimal point.
	Accuracy	± 1 % full range
Freq. Display	Range	15.00 - 1,200 Hz 20.00-5,000Hz
	Resolution	10.00-99.99 Hz, 0.01 Hz 100.0-999.9 Hz, 0.1 Hz 1,000-5,000 Hz, 1 Hz
	Accuracy	± 0.01% full range



General/Environmental

Temperature	Operating: 0° to 55° C Storage: -10° to 70° C
Humidity	0 - 95%, Non-condensing
Cooling	Front and side forced air intake (600 CFM) with rear exhaust.
Altitude	Operating: 6,500 Ft (1,981m) Storage: 40,000 Ft (12,192 m)
Heat Dissipation	6.5kBTU/ hr (Full kW Load)
Audible Noise	65 dba Max @ 1 Meter
Agency Approvals	Safety UL 61010 -1 EN 61010 -1 EMC EN 61326 -1

Protection and Safety

Hardware	Over-current, short circuit, over- temperature
Programmable Current Limit	A single RMS programmed, average responding, value is provided for all phases. Limits current by reducing output voltage.
Programmable Current Protect	Allows the power source to operate in "constant voltage" mode, interrupting output when specified current protect limit is exceeded.

Mechanical Specifications

Height	160AMX: 8U (14", 356mm) Transformer Module: 3U (5.25", 133mm)
Depth	160AMX: 23.5" (597mm) Transformer Module: 23.5" (597mm) (Approx. from front panel to the rear of chassis.)
Weight	160AMX: 195 lbs (88.6kg) Transformer Module: 125 lbs (56.8kg)
Mounting	Standard 19" rack (483mm). Cabinet options available.

Hardware Options

/S	RS232 Interface. 38.4kbps, (Standard on UPC-3)
/G	GPIB Interface, IEEE-488.2. (Standard on UPC-32)
/M7073	Safety Interlock Normally Open Contacts
/M99413	Safety Interlock Normally Closed Contacts
/PXXXXXX	Rack option available in different sizes, please contact Pacific Power Source for details.
/MXXXXXX	Other factory specified modification

Software/Firmware Options

/Prog-Z	Programmable Output Impedance
/HAS	Harmonic Analysis and Synthesis
/IR	In-Rush Meter. Capture and view peak in-rush current values via front panel or remote interface (UPC-1 only).
Test MGR	UPC Test Manager License: Create, edit, and execute Test sequences and reports. Ordered as separate line item
Test SEQ	Avionics test sequences; DO-160, ABD-0100, ABD-0100 (A350), Ordered as separate line item, Requires 'Test' Manager License.

Ordering Information

Model	Controller	Options	T-Ratio (160AMXT Only)	Input Voltage (V_{IN})
<input type="checkbox"/> 160AMX	<input type="checkbox"/> UPC-1M	See List Above	<input type="checkbox"/> Ratio 1.5:1	<input type="checkbox"/> 208 VACΔ ± 10%, 47-63Hz
<input type="checkbox"/> 160AMXT	<input type="checkbox"/> UPC-1		<input type="checkbox"/> Ratio 2.0:1	<input type="checkbox"/> 220VACΔ ± 10%, 47-63Hz
	<input type="checkbox"/> UPC-12		<input type="checkbox"/> Ratio 2.5:1	<input type="checkbox"/> 240VACΔ ± 10%, 47-63Hz
				<input type="checkbox"/> 220/380VACΔ ± 10%, 47-63Hz
				<input type="checkbox"/> 240/416 VACΔ ± 10%, 47-63Hz
				<input type="checkbox"/> 277/480 VACΔ ± 10%, 47- 63Hz

Available Models

With Manual Controller

160AMX-UPC1M
160AMXT-UPC1M

With Programmable Controller

160AMX-UPC1 160AMXT-UPC1
160AMX-UPC12 160AMXT-UPC12

Order Example

160AMXT-UPC12, T= 2.0:1, V_{IN} : 220/380VAC

- 6kVA, 1-Phase, AC Power Source with optional transformer assembly and UPC-12 programmable controller.
- Standard GPIB Interface
- 2.0:1 Transformer Ratio
- 220/380VAC, 1 Phase Input Voltage

Typical Delivery Items

- AC Power Source
- English Manuals (AC Source and Controller)
- UPC Studio Software - (Download)
- UPC Interactive LabVIEW™ Libraries (Download)
- Compliance Certificate with Test data
- CE Conformity Document (CE Models)



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