

Transformer Test Solutions



INNOVATE THE WAY YOU TEST

Advanced AC Power Source / Frequency Converter Test Solutions



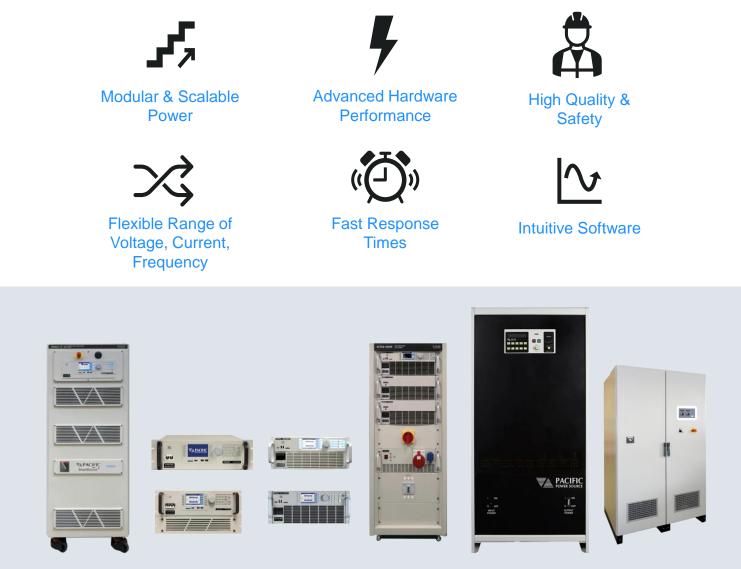




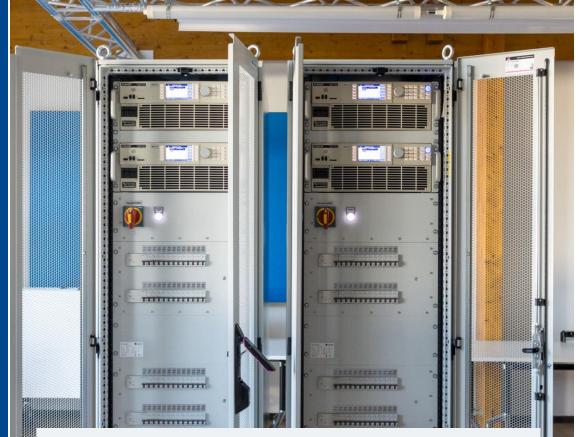
AC & DC Solutions

- AC Power Sources & Frequency Converters
- Regenerative Grid Simulators
- AC & DC Sources & Loads
- EMC Test Systems
- Test Control Software
- Custom System Integration

PRODUCTS & SOLUTIONS Celebrating Over 50 years in Business



PacificPower.com



Our reputation as a market and technology leader stems from best-in-class products, continual investments in R&D, and exceptional customer support, worldwide.



The PPS Advantage



High Performance, Safety & Reliability



Best-in-Class User Experience



Versatility



Customized System Solutions



Fast Lead Times









Excellent Customer Service





Transformer Applications

Power Line Transformer Testing

- Pole Mount to Substation

Harmonics Mitigating or Air-Cooled Testing

- Modular and Scalable Power
- Maximum System Reliability
- Robust, Rugged Physical Design
- Powerful Output
- Lower Install & Maintenance Costs
- Unmatched Performance/Price Ratio
- User-Friendly Display & Control











Example Transformer Test Customers

ABB FAT-N





Example applications

- Facility frequency converter
- Transformer production line tests
- Safety compliance testing
- Applied Test Sets
- Core loss and load loss
- Induced Testing
- Heat run











Transformer Test Solutions

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Mid to High Power	Low to Mid-Power	Very High Power
MS Series	ADF or AFX Series	Zenone
62.5kVA per cabinet Parallel up to 625kVA	60kVA, 90kVA,180kVA ADF Series	250kVA, 500kVA, 1MW
 20-500Hz (1000Hz. Optional) Voltage: 0 up to 600V Single, Split, Three-Phase Sine Waveform Only Last Time Buy: 07/31/25 	 45 – 500 Hz; Option: 15 – 1,200 Hz Voltage: 0 up to 300V L-N/520V L-L Single or Split, Three-Phase Sine Waveform Only <i>AFX Series *Recommended for Harmonics</i> 5 – 1,200 Hz; Extended:1 – 3,000 Hz Single, Split, Three phase Output Modes 	 40Hz - 200Hz; Option up to 450Hz Voltage: 0 up to 300V L-N/520V L-L Three - Phase Sine Waveform Only
	 Voltage: 0 up to 333Vac L-N/576Vac L-L or 425Vdc 	

Advanced Waveforms and Harmonics Capabilities





MS Series up to 62.5kVA

Previous Generation Transformer Frequency Converter

- AC only Test Systems
- Single, Split, Three phase Output Modes
- Wide Power Range Options 62.5kVA to 625kVA
 - Up to 0-600 VAC
 - Programmable Frequency
 - 20-500 Hz
 - 1000Hz optional
- GPIB or RS232 Interfaces
- Compatible with PPS UPC Manager for Legacy Customers



Previous Generation Compatibility

For previous MS Series customers who prefer to have the same model, a Last Time Buy is available until 7/31/25

End of Life Notice

 Due to supply parts, Pacific Power will no longer be manufacturing the MS Series. The Last Time Buy date is: 07/31/25



60kVA, 90kVA per cabinet Parallel up to 180kVA (2 cabinets)



Compact High Power Density

Maximize floor space with 90kVA per cabinet

ADF or AFX Series up to 180kVA

High Power Density for Mid to High Power Applications

ADF Series

- Single, or Split & Three phase Output Modes
- Constant Power Range Options: 300V L-N/519V L-L
- **Programmable Frequency:** 45 to 500 Hz; 15 to 1200 Hz Option
- Sine Waveform; Scalar Measurements

AFX Series

- Single, Split, Three phase Output Modes
- Constant Voltage Range: 0 up to 333Vac L-N/576Vac L-L or 425Vdc
- **Programmable Frequency**: 15 1,200 Hz; Extended:1 3,000 Hz
- Phase programming, Transient Mode
- Sine, Square, Triangle, Clipped, Arbitrary Waveforms
- Scalar, Waveform Capture, Harmonic Analysis

USB, LAN, GPIB & RS232 Interfaces PPS UPC Compatible Manager for Legacy Customers





Scalable High Power

Up to 1MW for high power applications

FVCT Series Pacific Power Source Powered by Zenone High Power AC Power Source / Frequency Converter

- Power Levels: 250kVA, 500kVA, 1MW
- Three Phase AC Output Modes
- Wide Power Range Options
 - up to 1000VL-L | 577VL-N
 - Single or Dual Voltage Ranges
- Programmable Frequency
 - 40Hz 200Hz
 - Alternate options 15Hz-80z, 200Hz 350Hz, 350Hz 450Hz
- Overload capability 120%
- Standard RS232, RS485 and Analog Input
- Optional Fiber Optic Interface
- Sine Wave Output
- Harmonic Capabilities



Enhance Transformer Testing

Core Loss Tests

Perform at a wide range of frequencies without changing test system configuration

3

Frequency Control Methods

Eliminate over-voltage conditions on the UUT (over-voltage occurs when the capacitive transformer load self-excites a motor generator)

2

Induced Tests

All transformers become capacitive at some frequency. Easily vary the frequency to find the minimum excitation current. Quickly change frequency to a multiple of the core loss frequency, then ramp testing to find the induced test frequency that draws the least current

4

Partial Discharge Filtering

Built-in output capacitive filtering on the Pacific Power Source unites reduces the Partial Discharge (PD) to less than 5pC





In-Field Examples



MS Series



Zenone FVCT Series





Modern Transformer Test Systems Vs. Legacy Methods

Test Advantages over Motor-Generator Sets:	Test Advantages over Under Load Regulators:
 Voltage stability Quieter operation Ability to perform RIV/PD without in-line noise filters Built in soft-start feature does not need more than rated power at start-up Variable frequency range Low risk of self-excitation 	 Finer control over output voltage adjustments (i.e. resolution of 0.1Vac compared to 10 to 20Vac) Built-in variable frequency control No sliding contacts to generate PD due to moving brushes Faster control of voltage ramps Ability to turn off the voltage instantly

• Motor-generation sets can have back-EMF



Test System Requirements & Advantages

- High Performance
- ✓ High Frequency & Precise Control
- $(\underline{\pm})$ High Current, Low Bandwidth
- **₋**∽,
- Modular & Scalable Power

- Fast Response Times
- Interoperable with Third-Party Devices
- \bigcirc
- Safety Protection Features
- User-Friendly Display & Control Options





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Pacific Power Source Products Powered by

Zenone

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About Zenone Elettronica

Pacific Power Source is a close partner with **Zenone Elettronica**, a leader of high power, high energy efficient test solutions such as AC current sources, frequency converters, and more. Zenone is a trusted partner with high-quality test solutions. We carry a select group of products from Zenone Elettronica which compliments our portfolio solutions.

AZX Series: A Partner Collaboration

Our flexible, high performance, and energy-efficient he **AZX Series** 'All-in-1' AC/DC Power Source, Current Source, AC/DC Load is **Pacific Power Source** product collaboration with Zenone Elettronica.









Pacific Power Source Powered by Zenone Elettronica







FVCT SERIES

GI2k Series, GI-S2k Series, GIS2k Series

AL3000 & R SERIES

High Power, Energy Efficient AC Frequency Converters

 Frequency converters 5KVA to 600KVA 150Vac to 1000Vac

AC /AC&DC Current Sources

- Pulse AC Current source 5KVA to 300KVA 900A to 40KA output frequency 40 - 200Hz
- AC Current source 600VA to 300KVA 50A to 20KA output frequency 40 200Hz
- AC and DC Current source 600VA to 300KVA 40A to 10KA output frequency DC
 2000Hz

High Power DC Power Supply

- Fast DC Power 5KW to 500KW 10Vdc to 1200dc
- Fast Bi-directional DC Power 5KW to 500KW 10Vdc to 1200dc

