

PXe-AFV-P Series

High-performance programmable AC/DC power source

The PXe-AFV-P Series provides programmable AC and DC output, integrated measurement and disturbance simulation in a compact 2U or 5U format. Four ratings cover 600VA to 5kVA for design verification, quality assurance, automated test and production applications.

Output voltage is adjustable to 310Vac, with 40 to 500Hz operation as standard and 15 to 1000Hz available as an option. Low waveform distortion, fast response and high peak-current capability make the source suitable for both controlled supply simulation and demanding inrush tests.



Compact rack-mount programmable AC power source.

600VA to 5kVA Four power levels in compact 2U and 5U chassis formats.	0 to 310Vac Dual output ranges provide controlled AC test voltage.	15 to 1000Hz Extended frequency option for aerospace and specialist tests.	AC and DC output One platform supports AC supply simulation and DC testing.
Low distortion THD from 0.3% at 40 to 100Hz under resistive load.	Fast response Voltage slew response within 300 microseconds for disturbance tests.	High peak current Up to 4.5 times rated RMS output current for inrush events.	Complete connectivity Ethernet, USB, RS232, RS485 and PLC remote I/O as standard.

Typical applications

Design and validation Power electronics, consumer products, motors, converters and component development.	Aerospace and defence 400Hz equipment, MIL-STD supply disturbance and avionics verification.	Production and ATE Repeatable sequences, remote programming, quality assurance and end-of-line test.	Compliance support Sags, surges, dropouts, spikes and frequency variation for pre-compliance work.
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Selection points

Choose the output rating around continuous load, expected inrush, voltage range and frequency duty. For automated systems, also define the required remote interface, sequence timing, trigger method and any calibration or reporting requirement.

Output rating Select 600VA, 1250VA, 2500VA or 5000VA around the real load profile.	Frequency duty Use 40-500Hz standard operation or specify 15-1000Hz where required.	AC or DC testing Confirm whether AC only, DC only or combined test sequences will be used.	System integration Define remote control, PLC I/O, synchronisation and software needs early.
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Compact hardware with direct front-panel and remote control

Touch operation, rotary adjustment and a full set of standard interfaces support bench, rack and automated test use.

The 4.3-inch touchscreen and rotary control provide quick access to voltage, current, frequency, waveform and sequence settings. Results including RMS voltage, current, true power, apparent power, power factor, crest factor and reactive power are available directly from the front panel.

The source can also be incorporated into automated systems using Ethernet, USB, RS232 or RS485. GPIB and analogue control are available as options, while PLC remote input/output and a synchronisation signal support coordinated test equipment and production fixtures.



Front panel with touchscreen and rotary control.

Front-panel operation

Power, output state, test sequence and measurement information are available without a separate computer. The touchscreen supports rapid parameter changes, while the rotary knob provides controlled fine adjustment.

Note: the front-panel USB port is not used.



Rear-panel integration

AC output, DC output, remote sense, Ethernet, USB, RS232/RS485, PLC I/O, synchronisation and mains input connections are brought together on the rear panel for clean rack integration.

Remote interfaces

Standard: Ethernet, USB, RS232, RS485 and PLC remote input/output.

Optional control

GPIB and analogue control for legacy ATE and specialised systems.

Remote sense

Compensates for lead voltage drop at the connected test item.

Output synchronisation

5V BNC event signal for voltage or frequency changes.

600VA / 1250VA / 2500VA

2U construction gives high power density for bench and rack systems.

5000VA

5U construction provides increased output power in the same 19-inch width.

Current foldback

Constant-current mode maintains the set current while output voltage varies.

Stored programmes

50 memories with 24 steps each provide up to 1,200 programmed test steps.

Measured parameters and automated test support

Electrical measurements

RMS voltage, RMS current, true power, apparent power, reactive power and power factor.

Waveform behaviour

Crest factor, peak current, output frequency and transient response can be reviewed during the test.

Sequence control

Stored steps, phase-angle control and output synchronisation support repeatable test routines.

PC integration

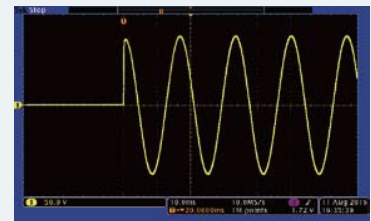
Control software and LabVIEW support simplify programming, data collection and ATE integration.

Programmable test functions for supply variation and disturbance testing

The AFV-P Series combines controlled output sequencing, transient generation, waveform timing and PC automation.

Sweep and ramp testing

Voltage and frequency can be changed as a single step or continuous sweep. Adjustable ramp rates support supply-variation tests and can reduce starting current when energising motors or other high-inrush loads.

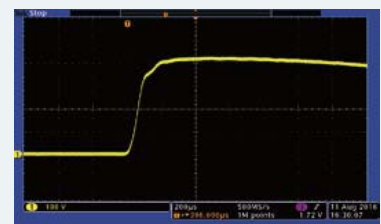


Transient generation

Built-in waveform functions create common power-line disturbances including surges, sags, spikes and dropouts. Stored sequences provide repeatable immunity and design-verification tests.

Fast slew rate

Output voltage can move from 0 to 90% within 300 microseconds. This response supports disturbance and pre-compliance testing such as IEC 61000-4-11 or MIL-STD-704F applications.

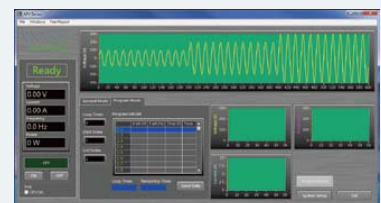


High peak current and phase control

Up to 4.5 times rated RMS peak current is available for inrush testing. Start and end phase angles can be programmed from 0 to 360 degrees for repeatable switch-on and switch-off conditions.

Control software and LabVIEW support

PC control software and a LabVIEW driver support remote setup, sequence management, measurement collection and integration into automated test environments.



PXe-AFV-P Series specification

Preliminary specifications. Final configuration and performance are confirmed at quotation stage.

Parameter	AFV-P-600	AFV-P-1250	AFV-P-2500	AFV-P-5000
INPUT				
Phase	Single phase	Single phase	Single phase	Single phase
Input voltage	98-132 / 196-264Vac	98-132 / 196-264Vac	196-264Vac or 175-235Vac	196-264Vac or 175-235Vac
Input frequency	47-63Hz	47-63Hz	47-63Hz	47-63Hz
Maximum input current	10A	20A	20A	40A
AC OUTPUT				
Rated power	600VA / 500W	1250VA / 1000W	2500VA / 2000W	5000VA / 4000W
Output arrangement	Single phase, 2-wire + earth	Single phase, 2-wire + earth	Single phase, 2-wire + earth	Single phase, 2-wire + earth
Voltage ranges	0-155 / 0-310Vrms	0-155 / 0-310Vrms	0-155 / 0-310Vrms	0-155 / 0-310Vrms
Voltage resolution	0.1Vrms	Same	Same	Same
Frequency range	40-500Hz; option 15-1000Hz	Same	Same	Same
Frequency resolution	0.1Hz; 1Hz at >100Hz	Same	Same	Same
Maximum RMS current	5A / 2.5A	10A / 5A	20A / 10A	40A / 20A
Maximum peak current	22.5A / 11.3A	45A / 22.5A	90A / 45A	180A / 90A
THD, resistive load	<=0.3% 40-100Hz; <=0.5% 101-500Hz; <=0.8% 501-1000Hz	Same	Same	Same
Regulation / response	Line +/-0.1V; load <=0.07% FS; response <=300us	Same	Same	Same
Crest factor	>=3	Same	Same	Same
DC OUTPUT				
Rated DC power	300W	600W	1250W	2500W
DC voltage ranges	0-210 / 0-420V	0-210 / 0-420V	0-210 / 0-420V	0-210 / 0-420V
Maximum DC current	2.5A / 1.25A	5A / 2.5A	10A / 5A	20A / 10A
Ripple and noise, RMS	<=0.15%	<=0.15%	<=0.15%	<=0.24%
MEASUREMENT				
Voltage range	0-420Vrms	Same	Same	Same
Voltage accuracy	+/-[0.2% reading + 5 counts]	Same	Same	Same
Voltage resolution	0.1V	Same	Same	Same
Frequency range	15-1000Hz	Same	Same	Same
Frequency accuracy	+/-0.1Hz at 40-500Hz; +/-0.2Hz at 501-1000Hz	Same	Same	Same
Frequency resolution	0.1Hz	Same	Same	Same

PXe-AFV-P Series specification - continued

Current, power, protection and general specifications.

Parameter	AFV-P-600	AFV-P-1250	AFV-P-2500	AFV-P-5000
MEASUREMENT - CONTINUED				
Current range	Hi: 1-12A / Lo: 0.005-1.2A	Hi: 2-24A / Lo: 0.005-2.4A	Hi: 0.05-48.00A	Hi: 0.05-48.00A
Current accuracy	+/-[1% reading + 5 counts] at 40-500Hz; +/-[1% reading + 10 counts] at 501-1000Hz	Same	Same	Same
Current resolution	Hi: 0.01A / Lo: 0.001A	Hi: 0.01A / Lo: 0.001A	Hi: 0.01A / Lo: 0.001A	Hi: 0.01A
Peak current range	0-45A	0-90A	0-180A	0-180A
Peak current accuracy	+/-[1% reading + 5 counts] at 40-500Hz; +/-[1% reading + 10 counts] at 501-1000Hz	Same	Same	Same
Peak current resolution	0.1A	Same	Same	Same
Power range	Hi: 100-1200W / Lo: 0-120W	Hi: 200-2400W / Lo: 0-240W	Hi: 0-4800W	Hi: 0-4800W
Power accuracy	+/-[2% reading + 10 counts] at 40-500Hz; +/-[2% reading + 15 counts] at 501-1000Hz	Same	Same	Same
Power resolution	Hi: 1W / Lo: 0.1W	Hi: 1W / Lo: 0.1W	Hi: 1W / Lo: 0.1W	Hi: 1W
GENERAL				
Efficiency	>=80% at maximum power	>=80% at maximum power	>=80% at maximum power	>=80% at maximum power
Protection	OVP, OCP, LVP, OPP, OTP, RCP, fan fail	Same	Same	Same
Interfaces	Ethernet, USB, RS232, RS485, PLC I/O; optional GPIB / analogue	Same	Same	Same
Over Current Foldback	CC Mode (Constant Current)	Same	Same	Same
Output Sync Signal	ON, event for voltage or frequency change; output signal 5V, BNC type	Same	Same	Same
Memories	50 memories / 1,200 steps	50 memories / 1,200 steps	50 memories / 1,200 steps	50 memories / 1,200 steps
Operating temperature	0-40 degrees C	0-40 degrees C	0-40 degrees C	0-40 degrees C
Dimensions, H x W x D	89 x 442 x 450mm	89 x 442 x 600mm	89 x 442 x 600mm	222.5 x 442 x 600mm
Approximate mass	16kg	20kg	31.3kg	70kg

Notes: Output values shown as low-voltage range / high-voltage range where applicable. All specifications are preliminary and may change without notice. Detailed accuracy adders, sequence timing and full programming information are available on request. The AFV-P-1250 chassis depth is confirmed as 600mm in the source specification.

Ordering and configuration

Confirm required power rating, input supply, AC/DC output range, frequency option, interfaces and any rack or automation requirements.

Support and calibration

PX can provide application review, optional calibration documentation, remote support and assistance with automated test integration.