ADF Series

High Frequency AC Power Source
15kW up to 180kW | 1 OR 3-Phase

Economy Model, Essential Functions, Trusted Performance

Key Specifications

- Single OR Three-Phase
- 85% Energy Efficiency
- up to 15kVA in 4 U chassis
- 15kW parallelable up to 180kW
- Voltage Range:
  300Vac L-N / 520Vac L-L
- Extended Voltage Option:
  400Vac L-N / 690Vac L-L
- Frequency: 45 - 500Hz;
  (Extended Mode 15 - 1200Hz)

Highlights

- DC Output Mode Option
- Modular and Scalable Power
- Constant Power
- Phase Angle Programming
- Active Three Phase PFC input with Inrush Current Limiting
- Precise Voltage & Load Regulation
- Metering of Volts, RMS Current, Peak Current, Apparent & True Power
- Pure Sine Wave AC Output
- Scalar Measurements
- Protection against overcurrent, short circuit and overtemperature
- **SmartSource Suite** Control Platform

GPIB RS232 USB LAN LXI

ADF Series Overview

The ADF Series delivers pure, clean AC output waveforms for reliable and accurate power testing. Select from single-phase OR three-phase models with power levels scalable up to 180kVA+. This economy model provides all the essential functions for frequency conversion and power testing, plus a user-friendly interface. The ADF Series delivers stable, precise, and repeatable performance.

Application Examples:

- Aerospace & Defense
- Data Center Networks & Servers
- High Frequency Converter
- UPS, Medical, White Goods, Appliances, HVAC
- General Purpose Applications

Key Advantages

85% Energy Efficiency & Unique Sleep Mode

General Purpose High Frequency Converter

Pure Sine Wave & Scalar Measurements

Cost Effective, Economy Model

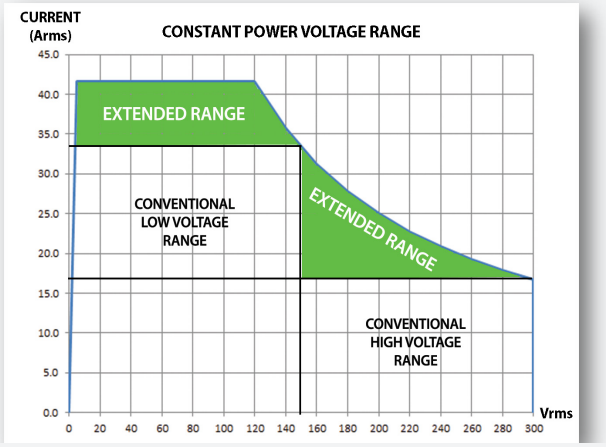
Modular & Scalable Power up to 180kW

- Flexibility to scale power now or later as you need it
- Paralleled units can have different power ratings
- Auxiliary no-controller models offer low-cost option
- Complete integrated 19” Rack systems; select from 18U, 32U, and 42U standard cabinet sizes
- Parallel configuration kits available for system integrators using their own cabinets.

Constant Power Provides Wide Operating Envelope

Unlike traditional AC power sources, which trade off voltage and current, the ADF Series operates along a constant power curve providing an extended operating range.

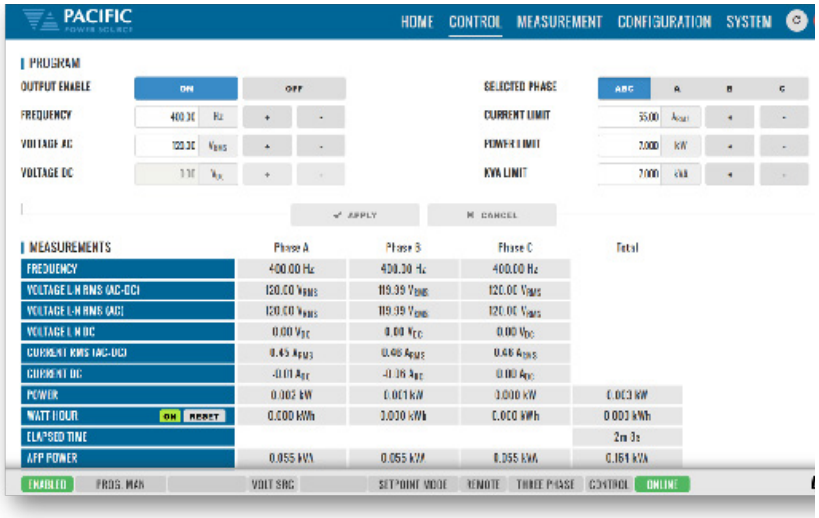
- More current at lower voltages and higher voltage at lower currents
- A wider operating range without switching voltage ranges
- Uninterrupted output, preventing EUT shutdown during testing



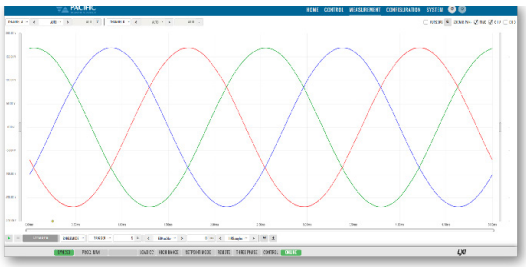
3150ADF (15kVA) operating on a constant power curve. At 160V you get nearly double the current and power, shown in the green shaded area.

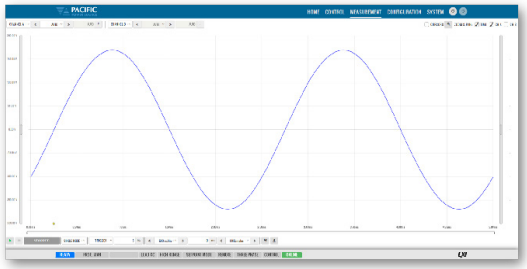
Pure Sine Wave Output Capability

Find over 200 steady state settings available to customize. Save time and increase productivity.



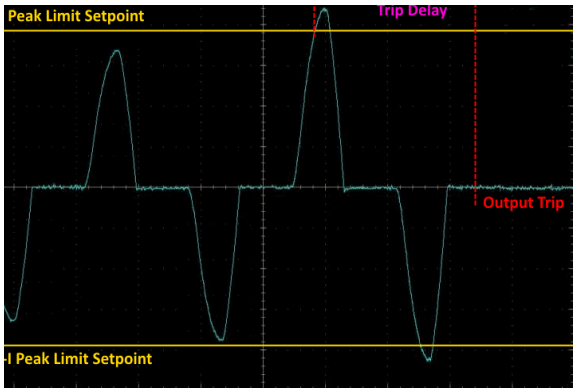
Easily Create Pure Sine Waves





Layers of Safety Protections

- **Programmable Protections Limits:** RMS Current, Peak Current, Over Voltage, Under Voltage, True Power (Watt), Apparent Power (VA), Frequency Over / Under Limits
- **Galvanic Isolation:** Fully isolation between mains and outputs and individual output phases



Peak Protection Limits

Available Options for Extended Operating Range

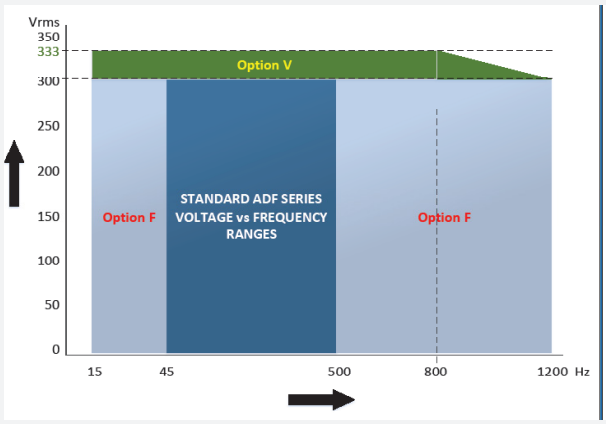
Voltage & Frequency ranges of the ADF Series can be extended using the available "V" and/or "F" options. On three phase ADF models, a single phase output option "M" is available as an option as well. Also available is a DC output mode option "D".

Option V: Extended Voltage Range to 333Vac L-N
This extended range increases the maximum output voltage to 333Vac L-N / 576Vac L-L. This supports testing up to 20% for 480V nominal powered equipment and allows testing of single phase universal 90V ~ 265V AC input products to 120% of their maximum nominal input specification.

Option F: Extended Frequence Range to 1200Hz
The extended frequency range option supports testing electrical railway equipment (16.6Hz) or testing wild frequency avionics equipment (360Hz-800Hz) by extending the frequency range to 15Hz-1200Hz.

Option D: DC Output Mode
Add DC output mode to the AC Source. In DC mode, bipolar ± 425Vdc voltage output is available.

Option M: Single Phase Output Option
Configure a three phase 3xxxADF model to be configured in single phase output mode. This mode requires shorting output terminals A, B & C.

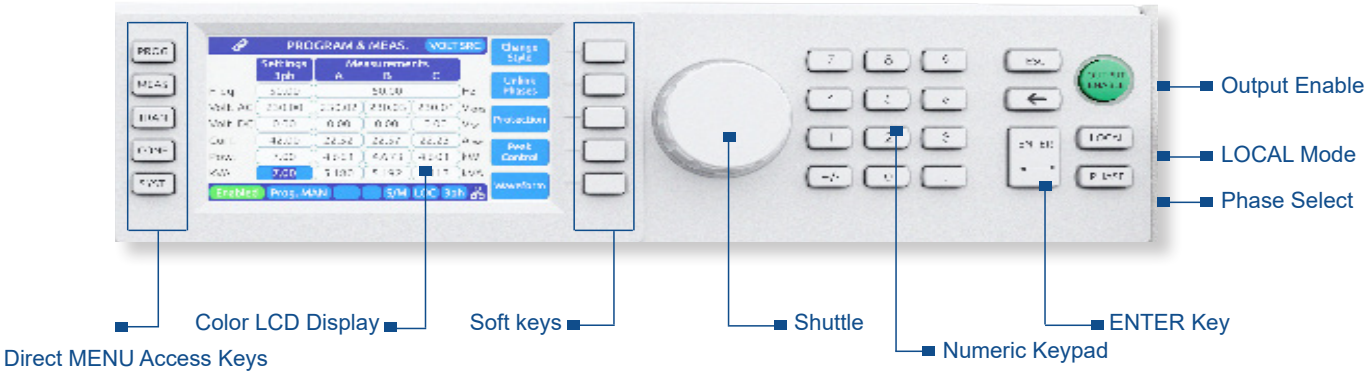


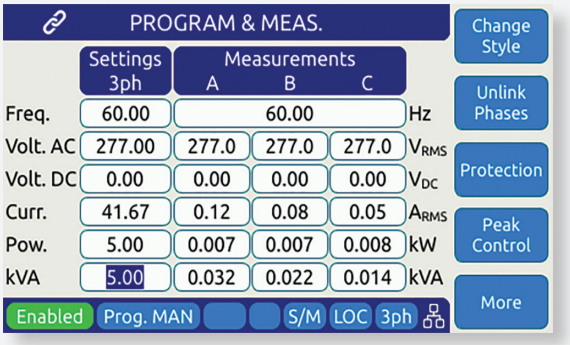
Extended Voltage and Frequency Range

Example Applications

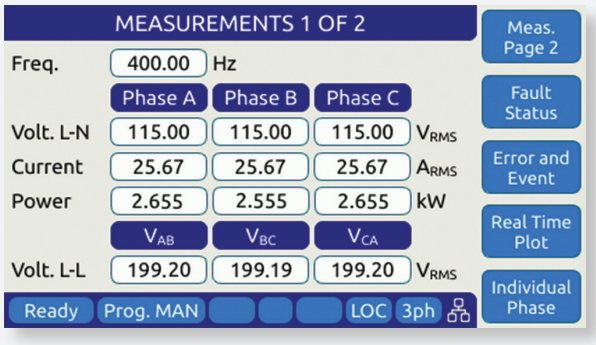
Simplify Test with Multiple Control Options

Easily access and control the unit through the front panel, USB, or via Ethernet (LAN) on any web browser.





Program & Measurement Screen



Measurement Screen

SmartSource Suite, Built-In

Breakthrough Remote Control Platform for Enhanced Visualization & Control

The **SmartSource Suite** is an embedded web server that allows you to fully access and control Pacific Power Source products on any web browser, in real-time with an enhanced user experience and visualization tools.

Its intuitive user-interface, full access to all test functions, and easy programming capabilities substantially reduce test time and increase productivity.

- Enhanced Visualization
- Intuitive Test Creation & Execution
- Usability Without Limits

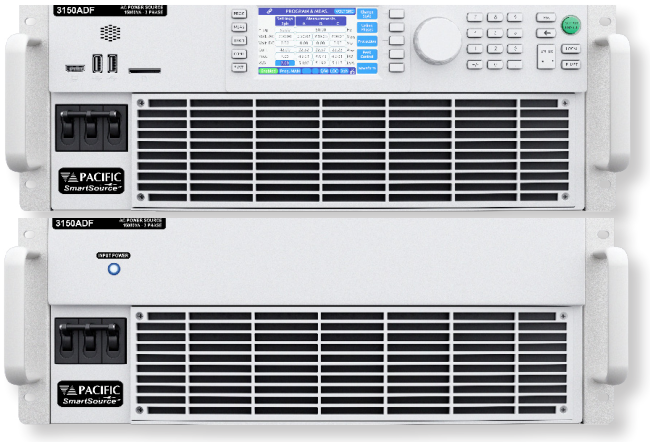
Access SmartSource Suite on Any Web Browser in Real-Time

High Voltage Output Transformer (T Option 400V)

If the 333Vac LN / 576Vac LL V Option is still not sufficient, the ADF power source can be equipped with an optional output Transformer module. For power levels up to 15kVA/kW, a single ADF style 4U chassis is added. This chassis contains three step-up transformers, one for each phase. This adds a voltage range capable of supporting the following output voltages:

Single Phase ADF	Three Phase ADF
0-400 VLN	0-400 VLN/0-692 VLL

Standard voltage ranges and Transformer options for 500VLN and 600VLN applications are available as well.



3150ADFT Shown with Optional 4U T-Option Chassis

Full Frequency Range

The transformer does not reduce the available output power on standard ADF models. Maximum voltage is reduced linearly from 45Hz down to 15Hz[1] and max. current from 1000Hz to 1200Hz on ADF units with the -F Option.

Constant Power Mode

The 400V transformer range has a constant power profile. That means full power is available all the way down to 160 Vac LN/277 Vac LL on the 400V range.

Voltage Sense

On the 400Vac range, voltage sensing auto-adjusts on the transformer's secondary side, ensuring optimal accuracy and compensating for load regulation errors.

ELECTRICAL	SPECIFICATIONS
Output Mode	AC Only
Voltage Range	
3 Phase ADF Model	0-400 Vac LN / 0-692Vac LL
1 Phase ADF Model	0-400 Vac LN
Resolution	0.01 V
Accuracy	± (0.25% + 0.25* f (kHz)) F.S.
Voltage Sense	Auto scales for T option range
Frequency Range	45Hz - 1000Hz Deratings: Current > 1000Hz of ADF models with -F Option
Constant Power Mode	From 40% to 100% of V Range

MECHANICAL	SPECIFICATIONS
Mechanical - T Option Chassis (15kVA rated)	
H x W x D	7.0" x 17.0" x 25.0" 178 x 482 x 635 mm
Weight	170 lbs. / 77.1 kg
Mechanical - Cabinet Systems	
Dimensions / Weight	Cabinet Systems from 30kVA to 60kVA are available with T Options. See table page 7

Note 1: Extended frequency ranges are not supported on this optional AC coupled voltage range.

Transformer Option Ordering Information

1) Standard "T" option is 400Vac L_N. Consult factory for other voltage ranges

2) 4U Transformer Chassis is not included on 1150ADFT or 3150ADFT single chassis models and must be a line item.

Available Standard Model Configurations

ADF Series AC Sources are available with single phase output up to 45kVA or with three phase output up to 180kVA.

MODEL	Phase Mode[1]	Rated Power[2] AC mode	Voltage Ranges Vac L-N	Max. AC Current[4] 3 Phase Mode	Max. AC Current[4] 1 Phase Mode	AC Input[3] -2 or -4	Form Factor
1150ADF	1 Phase	15 kVA	0-150V / 0-300 V	n/a	125 Arms *(62.5Adc)*	-2 or -4	4U Chassis, Bench or Rackmount
3150ADF	3 Phase0	15 kVA		41.7 Arms / 21.0 Adc	n/a		
1300ADF	1 Phase	30 kVA		n/a	250 Arms *(125.0 Adc)*	-2 or -4	18U Cabinet
3300ADF	3 Phase	30 kVA		83.3 Arms / 41.7 Adc	n/a		
1450ADF	1 Phase	45 kVA		n/a	375 Arms *(187.5 Adc)*		
3450ADF	3 Phase	45 kVA		125.0 Arms / 62.5 Adc	n/a		
3600ADF	3 Phase	60 kVA		166.7 Arms / 83.3 Adc	n/a	-4 Only	32U Cabinet
3750ADF	3 Phase	75 kVA		208.3 Arms / 104.0 Adc	n/a		
3900ADF	3 Phase	90 kVA		250.0 Arms / 125.0 Adc	n/a		
31050ADF	3 Phase	105kVA		291.7 Arms / 145.8 Adc	n/a		42U Cabinet
31200ADF	3 Phase	120 kVA		333.3 Arms / 166.7Adc	n/a		
31350ADF	3 Phase	135 kVA		375.0 Arms / 187.5 Adc	n/a		
31500ADF	3 Phase	150 kVA		416.7 Arms / 208.3 Adc	n/a		2 x 32U
31650ADF	3 Phase	165 kVA		458.3 Arms / 228.2 Adc	n/a		2 x 32U
31800ADF	3 Phase	180 kVA		500.0 Arms / 250.0 Adc	n/a		2 x 32U

Note 1: Single Phase Mode option (M) is available on three phase ADF Models. This option adds single phase output mode.
Note 2: Rated power shown is for Three Phase or Single Phase mode operation. For Split Phase mode, rated power is 2/3.
Note 3: AC input ratings: -2 = 208Vac Nominal, 3ø or -4 = 380~480Vac Nominal, 3ø. See specifications section for AC current requirements.
Note 4: DC output current ratings shown apply to ADF models configured with Option D only.

Models with T-Option Configurations

ADF Series AC Sources offer single-phase output up to 45kVA or three-phase up to 60kVA. Rack-mount and bench models are listed below, while cabinet systems come pre-wired for input and output power. All models require three-phase AC input. For other configurations, contact the factory. The 150/300Vac ranges remain available on T-Option cabinet systems—see the standard model table for current ratings.

MODEL	Phase Mode[1]	Rated Power[2] AC mode	T Voltage Range Vac L-N	Max. AC Current 3 Phase Mode	Max. AC Current 1 Phase Mode	AC Input[3] -2 or -4	Form Factor
1150ADFT	1 Phase	15 kVA	0-400 V	n/a	93.8 Arms	-2 or -4	2x 4U Chassis, Bench or Rack-mount
3150ADFT	3 Phase	15 kVA		31.3 Arms	n/a		
1300ADFT	1 Phase	30 kVA		n/a	187.6 Arms	-2 or -4	Fully wired 18U Cabinet
3300ADFT	3 Phase	30 kVA		62.5 Arms	n/a		
1450ADFT	1 Phase	45 kVA		n/a	281 Arms		
3450ADFT	3 Phase	45 kVA		93.8 Arms	n/a		
3600ADFT	3 Phase	60 kVA		125.0 Arms	n/a	-4 Only	Fully wired 32U Cabinet
Higher	For higher power T Option configurations, contact factory						

Note 1: Single Phase Mode option (M) is available on three phase ADF Models. This option adds single phase output mode.
Note 2: Rated power shown is for Three Phase or Single Phase mode operation. For Split Phase mode, rated power is 2/3.
Note 3: AC input ratings: -2 = 208Vac Nominal, 3ø or -4 = 380~480Vac Nominal, 3ø.

Technical Specifications

OUTPUT	Specification
Voltage	
Output Mode	AC / Optional DC
1150ADF	Single Phase
3150ADF	Three Phase or Split Phase
Standard Vac Range	0-300 Vac LN / 0-520 Vac LL
Extended Voltage Range[1] (Option V)	Increases max output voltage to 333Vac LN / 576Vac LL
Vdc Range (Option D)	0 - ± 425 Vdc
Programming Resolution	0.01 V
Accuracy	± 0.25% F.S.
Output Waveform	Sine
DC Offset	< 20 mV
Harmonic Distortion (Vthd) (full, resistive load, up to 300Vrms L-N)	< 400 Hz, < 0.5% 400 to 500 Hz, < 1.0% (Option F: > 500 Hz, < 1.5%)
Output Noise (DC to 300kHz)	< 150 mV RMS
Load Regulation	± 0.02% (CSC Mode) ±1% NL to FL (CSC off)
Line Regulation	< 0.1% for 10% Line Change
Voltage Sense	External Sense, max. voltage drop 5% F.S.
Voltage Slew Rate	AC > 1.0V/us
Output Isolation	550Vac
Frequency	
Standard Range	45.00 – 500.0 Hz
Extended Range (Option F)	15.00 – 1200.0 Hz
Programming Resolution	0.01 Hz
Accuracy	± 0.01%
Current Limit - RMS and Peak Modes	
RMS Range	See model table page 5
Crest Factor	
1150ADF	2.5:1@125A to 6.3:1@50A (312Apk/phase)
3150ADF	2.5:1@41.67A to 6.3:1@16.67A (104Apk/phase)
Programming Resolution	0.01 Arms
Accuracy	± 0.5% F.S.
Current Protection Modes	Constant Current (CC) or Output Trip (CV)
Current Overload Mode	Allows 130% of max. RMS current for up to 2.0 secs before CP is triggered when enabled
Phase Angle (3 Phase ADF Models only)	
Phase Settings	Three Phs Mode: A = 0°, B = 120°, C = 240° Split Phs Mode: A = 0°, B = 180°, C = 0°

Note 1: Supplemental specifications apply for Extended Voltage (Option V).

PROTECTION	Specification
Available Protections	Over Current fold-back or trip
	Prog. Peak Current Limit
	Power fold-back or trip
	App.Power fold-back or trip
	Over Voltage trip
	Over Temperature trip
OVP Programming Range	0 ~ 105% of voltage range
AC Input Voltage	Over and Under Voltage, 15%

MEASUREMENTS	Specification
Voltage (Vrms)	
Range	0 – 350 VLN / 0-600 VLL
Resolution	0.01 V
Accuracy	± 0.25% F.S.
Current (Arms)	
Range	See model table page 7
Resolution	0.01 Arms
Accuracy[1]	± 0.5% F.S.
Current Crest Factor	
Range	1.00 - 5.00
Resolution	0.01
Accuracy[1]	± 2.0% F.S.
Power (W)	
Range	See model table page 7
Resolution	0.01 W
Accuracy[2]	± 1.5 % F.S.
Apparent Power (VA)	
Range	See model table page 7
Resolution	0.01 VA
Accuracy[2]	± 1.5 % F.S.
Power Factor	
Range[2]	0.00 - 1.00
Resolution	0.01
Voltage (Vdc) (Requires Option D)	
Range	0 – 440 Vdc
Resolution	0.01 V
Accuracy	± 0.25% F.S.
Current (Adc) (Requires Option D)	
Range	See model table page 7
Resolution	0.01 Arms
Accuracy[1]	± 0.5% F.S.

Note 1: For Currents above 2.0 A
Note 2: For Power levels above 100 W

INTERFACES	Description
Remote Control	
USB	Device Type B
RS232	1200 - 921600 baud
LAN	LXI compliant, Ethernet, RJ45, TCP/IP Protocol, Telnet Protocol Command Line
LXI Compliant	LXI LAN eXtensions for Instrumentation
GPIB	IEEE488,1, IEEE488.2 (2003 incl., NI HS488) IEC 60488-1, IEC 60488-2 (2004)
	Functions: SH1, AH1, T6, L3, SR1, RL1, DC1, DT1
WiFi	Optional USB WiFi adaptor

SYSTEM FEATURES	Description
DISPLAY	
Type	Full Color, Touch LCD Display
Size	4.3" Diagonal
Resolution	480 x 272 pixels
USB Ports	2 Front Panel, 1 Rear Panel, Type A
SD Card	32 GB max. Capacity
Video Output	Monitor Out, Front Panel

AC INPUT	15 kVA Models[5]
Mains Voltage Form	4 Wire, L1, L2, L3 and PE
Frequency	47 - 63 Hz
-2 AC Input Versions (Available for systems up to 45kVA only)	
Input Voltage Range	208Vac – 240Vac ± 10%
Nominal Phase Current[1]	54 Arms
Peak Inrush Current[2]	< 1.5 x Irms
Input Power Factor	> 0.9
Efficiency	> 85%
-4 AC Input Versions (Available for all power levels)	
Input Voltage Range	380Vac – 480Vac ± 10%
Nominal Phase Current[3]	30 Arms
Nominal Phase Current[4]	24 Arms
Peak Inrush Current[2]	< 1.5 x Irms
Input Power Factor	> 0.9
Efficiency	> 85%

Notes:
1: Per ADF unit, 3ø, 208V nom. input voltage
2: Irms = Max. peak inrush current per unit
3: Per ADF unit, 380V nom. input voltage
4: Per ADF unit, 480V nom. input voltage
5: For parallel systems above 15 kVA, input current is multiplied by number of units

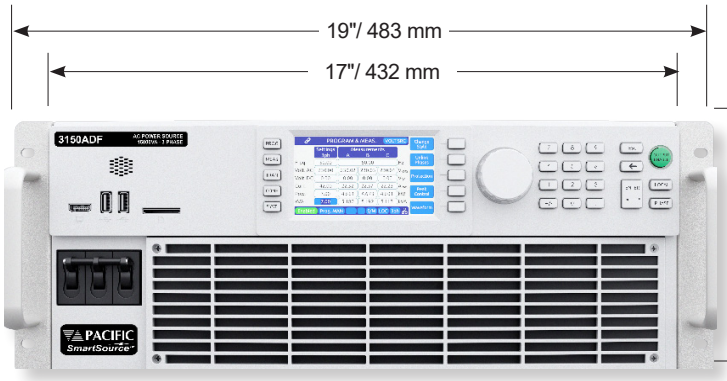
ANALOG & DIGITAL I/O	Specification
Analog Inputs (4)	AI1, AI2, AI3, A14 user defined functions
Range	-10 to +10V
Accuracy	± 0.1% F.S.
Impedance	5 kOhm
Analog Outputs (4)	AO1 AO2, AO3, AO4 user defined measurement functions
Range	0 - 5Vdc for 0 - F.S.
Accuracy	±0.1% F.S
Impedance	<10 Ohm
Digital Inputs (6)	Remote Inhibit, Trigger, Sync
Input Levels	Low < 0.4V, High > 2.0V
Digital Outputs (6)	Output Relay, /Function Strobe, Phase Sync
Output Levels	Low < 0.4V, High > 4.6V
Connector Type	DB25, Rear Panel

DIMENSIONS / WEIGHT	Specification
Dimensions Bench 15kVA Models (4U)	
H x W x D	7.0” x 17.0" x 25.0" 178 x 432 x 635 mm See Note 1 below
Shipping H x W x D	20" x 27" x 38" 508 x 686 x 965 mm
Weight Models up to 15 kVA	
Net	111.2 lbs. / 50.4 kg
Shipping	151 lbs / 68.5 kg
Note 1: Units can be zero-stacked in 19" EIA cabinet when using optional rack-slides. When using L-brackets, allow 1U space between units.	

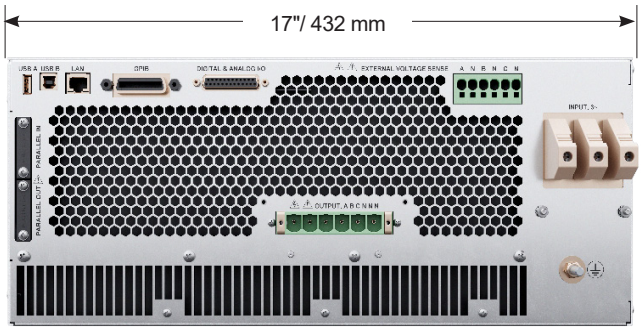
ENVIRONMENTAL	Specification
Cooling	Variable speed fan cooled, front intake with dust filter, rear exhaust
Audible Noise: At 1 meter distance	Standby: 46 dBA Full power: 85 dBA typical
Sleep Modes	Standby, All Power Stages off
Temperature	
Operating	0 to 40 °C / 32 to 104 °F
Storage	-20 to 70 °C / -4 to 158 °F
Humidity	< 80%, non-condensing
Altitude	2000 m / 6500 feet

REGULATORY	Specification
Safety	
Standard	IEC 61010-1:2010 (Edition 3)
EMC	
Emissions Standard	EN 55011:2009+A1:2010
Immunity Standard	EN 61000-4-2, -3, -4, -5, -6, -8, -11
Product Category	EN 61326-1:2013 (Measurement, Laboratory and Control Equipment)
Approvals	CE Mark NRTL Nemko on units delivered within North America or Canada only
RoHS (DIRECTIVE 2011/65/EU)	
Product Category	EN50581:2012

Unit Dimensions



The 3150ADF is designed for bench top or 19" equipment rack operation.



The Rear Panel provides connections for AC Input, External Sense, Aux I/O and remote control interfaces.

Ordering Information

Bench Models

- ☐ 1150ADF
- ☐ 3150ADF

Cabinet Systems[1]

- ☐ 1300ADF
- ☐ 3300ADF
- ☐ 1450ADF
- ☐ 3450ADF
- ☐ 3600ADF
- ☐ 3750ADF
- ☐ 3900ADF

Cabinet KIT Systems[1] (x = 2 or 4)

- ☐ 1300ADF-xG-KIT
- ☐ 3300ADF-xG-KIT
- ☐ 1450ADF-xG-KIT
- ☐ 3450ADF-xG-KIT
- ☐ 3600ADF-4G-KIT
- ☐ 3750ADF-4G-KIT
- ☐ 3900ADF-4G-KIT

Available Options

- ☐ D DC Output Mode
- ☐ F Extended Frequency Range
- ☐ M Single Phase Mode[2]
- ☐ O Output control switch
- ☐ R Option R (Transient Mode)
- ☐ T Output Transformer 400V Range
- ☐ V Extended Voltage Range
- ☐ W Isolated Output Neutrals[2]

Auxiliary Models (No controller)

- ☐ 1150ADF-2NC / 1150ADF-4NC
- ☐ 3150ADF-2NC / 3150ADF-4NC

Input Voltage (V_{IN})

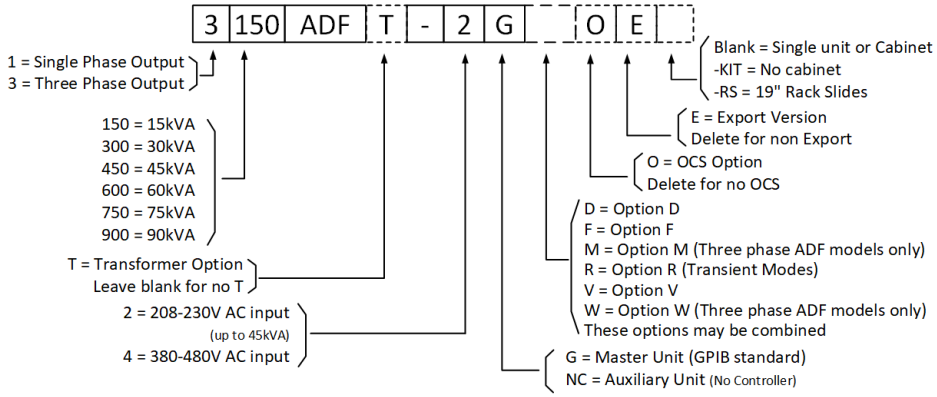
- ☐ -2 208V - 240Vac, 3Ø ± 10%, 47-63Hz
- ☐ -4 380V - 480Vac, 3Ø ± 10%, 47-63Hz

Export Version

- ☐ E Append "E" postfix or none

ADF Series Model Number Encoder:

Note:
- Solid outlined fields must be specified
- Dashed outlined fields are optional.



Order Example

3150ADF-2AG
- Bench Model, 15 kVA, 3-Phase, AC Power Source with USB, RS232, LAN, GPIB & AUX I/O
- 380~480Vac 3 Phase AC Input Voltage

Typical Delivery Items

- AC & DC Power Source
- English Manuals in PDF
- Rack Mount Handles
- Certificate of Compliance

Available Accessories

- Output shorting adapter for single phase output mode use (Three Phase ADF Model only). P/N 160086
- Paralleling Cable, 1 Ft. (Included with Aux models). P/N 778036
- Rack slides. P/N 703251

Note 1:
Cabinet systems consist of one master unit and one or more auxiliary units integrated into a 19 inch EIA cabinet. Includes input and output wiring to rear mounted compression terminal blocks. Shown with optional Emergency Power Off (EPO). Customers that require the use of their own cabinets can order system kits without cabinet.

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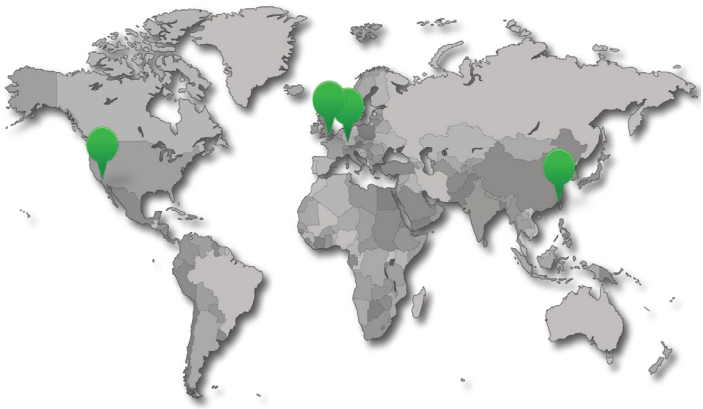
Innovate the Way You Test

by making it simpler, safer, more productive, and sustainable.

Global Sales & Service Centers



The Power of Expertise

About Pacific Power Source

Founded in 1971, Pacific Power Source is an industry leading manufacturer of AC and DC power test solutions. Our reputation as a market and technology leader stems from our best-in-class products, commitment to R&D investments, and exceptional worldwide customer support.

Pacific Power Source is a PPST Solutions Company.

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