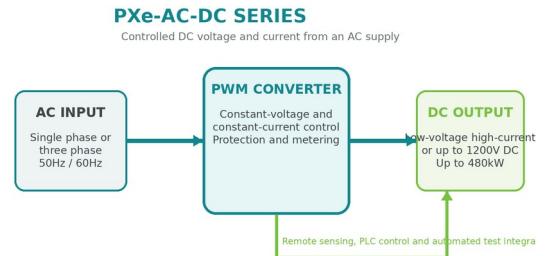


PXe-AC-DC Series DC Output Static Converters

AC input to regulated DC output | Constant-voltage and constant-current operation | Up to 480kW

PX Electronics PXe-AC-DC Series static power converters convert an available single-phase or three-phase AC supply into controlled DC output.

The range supports constant-voltage and constant-current operation, from compact industrial power supplies through to low-voltage, very-high-current systems and engineered DC outputs up to 1200V and 480kW.



Typical AC-to-DC conversion arrangement.

Where this product fits

Suitable for industrial DC systems, current injection, component and cable testing, DC motors, product burn-in, semiconductor manufacturing, electrochemical processes and specialist low- or high-voltage DC loads.

Low-voltage, high-current

Current injection, shunt, sensor, contactor, busbar and cable testing.

Higher-voltage DC systems

Industrial DC buses, power electronics, R&D and equipment up to 1200V DC.

Automated test integration

Optional RS232, RS485 and Modbus for PLC, computer and production-test control.

Input supply

Single phase on selected models or three phase at higher ratings

Operating modes

Constant voltage and constant current

Output range

Application-specific, including 0-6V / 5000A

Power range

Lower-power systems through to 480kW

Selection starting point

Confirm the available AC supply, required minimum and maximum DC voltage, continuous and peak current, load type, duty cycle, ripple and regulation limits, output connection, control method and project test evidence.

Configuration and model selection

A practical route from the available AC supply and load requirement to the correct DC converter

1. AC input Voltage, phase, frequency and available supply current	2. DC output Voltage range, continuous current and peak demand	3. Operating duty CV or CC mode, load type, ripple and regulation	4. Project Control, terminations, enclosure, FAT and documentation
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Available configurations

Parameter	Available configuration
Input phase	Single phase on selected lower-power models or three-phase four-wire for higher ratings
Input voltage	Typically 220V single phase or 380/400V three phase, with +/-10% tolerance
Input frequency	50Hz or 60Hz
DC output voltage	Application-specific low-voltage outputs and standard ranges up to 1200V DC
DC output current	Selected for the continuous current, peak current and duty cycle
Power rating	Lower-power rack systems through to engineered floor-standing systems up to 480kW
Operating modes	Constant voltage and constant current
Control	Front-panel operation with optional RS232, RS485 or Modbus
Construction	Rack-mounted or floor-standing according to voltage, current and power
Cooling	Forced-air cooling using exhaust fans

Popular configurations

Model	DC output	Power	Typical application
PXe-AC-DC-30-100	30V / 100A	3kW	Components, DC motors and lower-current industrial loads
PXe-AC-DC-30-200	30V / 200A	6kW	Current sensors, contactors and cable testing
PXe-AC-DC-30-500	30V / 500A	15kW	High-current component testing and industrial DC systems
PXe-AC-DC-30-1000	30V / 1000A	30kW	Busbar, cable and high-current assembly testing
PXe-AC-DC-60-100	60V / 100A	6kW	DC machinery, controls and development systems
PXe-AC-DC-60-250	60V / 250A	15kW	Industrial testing and higher-current DC loads
PXe-AC-DC-100-150	100V / 150A	15kW	Industrial controls, DC motors and power electronics
PXe-AC-DC-150-200	150V / 200A	30kW	Higher-voltage machinery and DC-system validation
PXe-AC-DC-300-100	300V / 100A	30kW	Industrial DC buses and high-voltage equipment testing
PXe-AC-DC-600-100	600V / 100A	60kW	High-voltage DC systems and power-electronics development
PXe-AC-DC-1200-100	1200V / 100A	120kW	High-voltage industrial and specialist DC installations
PXe-AC-DC-6-5000	0-6V / 0-5000A	30kW	Very-high-current injection, busbar, shunt and sensor testing

Technical specification

Typical PXe-AC-DC Series values. Model-specific performance is confirmed in the final technical proposal.

Specification	PXe-AC-DC Series	Specification	PXe-AC-DC Series
Conversion technology	PWM switching	Power range	Lower-power systems through to 480kW
Input phase	Single phase or three-phase four-wire, depending on rating	Input voltage	220V AC or 380/400V AC +/-10%, depending on configuration
Input frequency	50Hz or 60Hz, +/-10%	DC output voltage	Application-specific; standard ranges include 30V, 60V, 100V, 150V, 300V, 600V, 900V and 1200V DC
DC output current	Selected according to output voltage and power; custom high-current configurations available	Ripple	1% full scale
Load regulation	+/-1% full scale	Voltage setting range	10% to 100% rated voltage in constant-voltage mode
Current setting range	10% to 100% rated current in constant-current mode	Setting accuracy	Voltage +/-1%; current +/-1%
Measurement accuracy	Voltage, current and power: 0.5% full scale + 5 digits	Voltage resolution	0.1V below 1000V; 1V at 1000V and above
Current resolution	Model-dependent according to rated current	Power resolution	0.1W
Display	Voltage, current, power and time	Stored settings	Voltage and current memories; quantity depends on selected controller
Current limit	Adjustable from zero to maximum rated current	Voltage limit	Adjustable from zero to maximum rated voltage
Protection	Overvoltage, overcurrent, overtemperature and short-circuit protection	Cooling	Forced-air cooling using exhaust fans
Operating environment	0°C to 40°C; 20% to 80% RH, non-condensing	Control interfaces	Optional RS232, RS485 and Modbus

Specification basis

Values shown are series-level. Exact regulation, ripple, resolution, current capability and interfaces are confirmed for the selected operating point.

Dimensions and construction

Rack or floor-standing format, cooling, terminals, busbars, cable entry and enclosure are determined by voltage, current and power.

Documentation and compliance

Project specification, operating manual and Certificate of Conformity are supplied. FAT and witness records are available where included.

High-current installation considerations

For low-voltage high-current systems, cable and busbar resistance, contact resistance and connection quality can materially reduce voltage at the load. PX reviews cable length, cross-section, voltage drop, terminals, duty cycle, cooling, isolation, bonding and remote-sensing requirements.

PXe-AC-DC-6-5000 example specification

30kW | Adjustable 0 to 6V DC output | Adjustable 0 to 5000A output

Defined high-current example

The PXe-AC-DC-6-5000 is a 30kW PWM converter for very-high-current test and industrial applications. It accepts a 400V three-phase plus neutral supply and provides adjustable voltage and current with Modbus RTU communication.

Technical data

Specification	PXe-AC-DC-6-5000
Capacity	30kW
Input	400V AC +/-10%, three-phase plus neutral
Input frequency	50Hz or 60Hz
Output voltage	0 to 6V DC adjustable
Output current	0 to 5000A adjustable
Ripple	<=1% full scale
Voltage regulation	<=+/-1% full scale
Current regulation	<=+/-1% full scale
Load regulation	<=+/-1% full scale
Line regulation	<=+/-1% full scale
Communication	RS232 with Modbus RTU
Circuit mode	PWM
Voltage resolution	0.01V
Current resolution	0.01A
Display	Voltage and current
Protection	Overcurrent, overtemperature, short-circuit and overheat protection
Operating environment	0°C to 40°C; 20% to 80% RH
Dimensions	625W x 1000D x 1890H mm

Typical duties

Busbar, shunt, current-sensor, cable and high-current component testing.

Output connection

Heavy-duty bolted terminals or busbars, selected around continuous current and cable layout.

Control integration

Front-panel operation with RS232 / Modbus RTU for automated tests and data exchange.

Example specification note

The values above describe the supplied 30kW source configuration. Alternative voltage, current, power, dimensions, cooling and interfaces are confirmed for each selected PXe-AC-DC model.

Options, project support and quotation information

Configuration choices are reviewed against the load, installation and project evidence required.

Output and control options

Alternative DC ratings, programmable voltage and current limits, stored settings, remote sensing and automatic CV/CC transition where supported.

Communications and automation

RS232, RS485 and Modbus for computers, PLCs and automated test equipment. Commands and readback values are agreed before manufacture.

Mechanical and connection options

Rack or floor-standing construction, high-current busbars, custom cables, terminal covers, isolators and customer-defined connections.

Testing and project evidence

FAT, customer or third-party witness testing, regulation checks, protection operation, communications tests and agreed load points.

Project support

Application review

Operating point, load behaviour, duty cycle and output circuit

FAT

Voltage, current, regulation, protection and communications

Witness testing

Customer or third-party attendance where required

Documentation

Specification, drawings, test records and conformity documents

Information required to prepare a quotation

AC input supply

Voltage, phase, frequency and maximum supply current

DC output

Minimum, nominal and maximum voltage; continuous and peak current

Operating duty

CV, CC or automatic transition; continuous, pulsed or repeated cycle

Performance

Ripple, line/load regulation, setting accuracy and resolution

Connections

Cable, busbar, terminals, remote sensing and permitted voltage drop

Controls and evidence

Manual or remote control, communications, FAT and documentation

Battery-connected applications

A PXe-AC-DC converter may be suitable for battery-connected equipment development, but it should not automatically be treated as a complete battery charger. Battery chemistry, charge profile, temperature monitoring, isolation and charge termination must be defined separately.

Discuss your requirement

PX Electronics Limited | Unit 13B, Southview Park, Marsack Street, Reading RG4 5AF, United Kingdom | +44 118 206 7525 | info@pxelectronic.com | www.pxelectronic.com