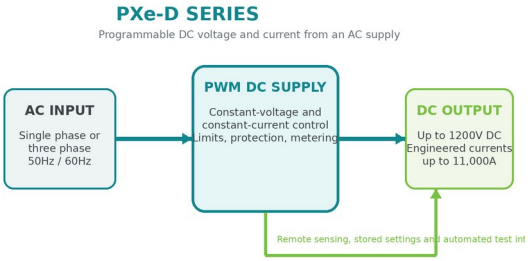
PXe-D Series Programmable DC Power Supplies

Adjustable DC voltage and current | CV/CC operation | Up to 1200V, 11,000A and 480kW

PX Electronics PXe-D Series programmable DC power supplies convert an available single-phase or three-phase AC supply into controlled, adjustable DC voltage and current.

The range supports constant-voltage and constant-current operation, allowing engineers to power equipment, apply controlled current or reproduce defined DC operating conditions. Configurations extend from compact lower-power supplies to engineered systems rated up to 480kW, with output voltages up to 1200V DC and high-current outputs for specialist applications.



Typical programmable DC power-supply arrangement.

Where this product fits

Suitable for current sensor and shunt testing, busbars and cables, DC current injection, contactors and breakers, DC motors, burn-in, power-electronics development, electrochemical processes and specialist industrial DC systems.

Low-voltage, high-current
Shunts, busbars, current sensors, contactors, cables and assemblies requiring substantial DC current.

Higher-voltage DC systems
Industrial DC buses, power-electronics development and specialist equipment testing 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, up to 1200V and engineered currents to 11,000A

Power range
Compact lower-power units through to 480kW

Selection starting point

Confirm the available AC supply, required minimum and maximum DC voltage, continuous and peak current, operating mode, 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 required DC operating point to the correct power supply

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

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, subject to model
Input frequency	50Hz or 60Hz
Output voltage	Application-specific DC output, including standard ranges up to 1200V DC
Output current	Selected according to continuous current, peak demand and duty cycle, with engineered ratings up to 11,000A
Power rating	Compact lower-power supplies through to engineered systems rated up to 480kW
Operating modes	Constant voltage and constant current
Control	Front-panel control with optional RS232, RS485 or Modbus communication
Construction	Rack-mounted or floor-standing, depending on power, voltage and current rating
Cooling	Forced-air cooling sized for the selected rating

Popular configurations

Model	DC output	Power	Typical application
PXe-D-30-100	30V / 100A	3kW	Component testing, DC motors and industrial control equipment
PXe-D-30-500	30V / 500A	15kW	Current sensors, contactors and high-current assemblies
PXe-D-30-1000	30V / 1000A	30kW	Busbar, cable and shunt testing
PXe-D-60-250	60V / 250A	15kW	Industrial DC equipment and motor testing
PXe-D-100-150	100V / 150A	15kW	Power electronics and industrial controls
PXe-D-300-100	300V / 100A	30kW	Industrial DC buses and higher-voltage equipment
PXe-D-600-100	600V / 100A	60kW	High-voltage DC systems and power-electronics development
PXe-D-1200-100	1200V / 100A	120kW	Specialist high-voltage industrial equipment
PXe-D-6-5000	0 to 6V / 0 to 5000A	30kW	High-current injection, busbar, shunt and sensor testing

Technical specification

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

Specification	PXe-D Series	Specification	PXe-D 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%	Output voltage	Application-specific; standard ranges include 30V, 60V, 100V, 150V, 300V, 600V, 900V and 1200V DC
Output current	Selected according to output voltage and power rating; high-current engineered configurations available	Operating modes	Constant voltage and constant current
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 output 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
Communication options	RS232, RS485 and Modbus, subject to selected controller	Cooling	Forced-air cooling
Operating environment	0°C to 40°C; 20% to 80% RH, non-condensing	Construction	Rack-mounted or floor-standing according to the selected rating

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 output considerations

At very high current, cable and busbar resistance, contact resistance and connection quality can materially reduce voltage at the load. PX reviews conductor length and cross-section, permitted voltage drop, terminals, duty cycle, cooling, output isolation, protection and remote-sensing requirements.

PXe-D-6-5000 example specification

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

Defined high-current example

The PXe-D-6-5000 is a 30kW programmable DC power supply for very-high-current test and industrial applications. It accepts a 400V three-phase plus neutral supply and provides adjustable voltage and current with PWM conversion, constant-voltage or constant-current control and RS232 Modbus RTU communication.

Technical data

Specification	PXe-D-6-5000
Capacity	30kW
Input supply	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
Input power factor	1.0
Communication	RS232 with Modbus RTU
Conversion technology	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 × 1000D × 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 PXe-D-6-5000 configuration. Alternative voltage, current, power, dimensions, cooling and interfaces are confirmed for each selected PXe-D model.

Options, project support and quotation information

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

Output and control options
Application-specific voltage and current ratings, programmable limits, stored operating 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	FAT	Witness testing	Documentation
Operating point, load behaviour, duty cycle and output circuit	Voltage, current, regulation, protection and communications	Customer or third-party attendance where required	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

Model-specific confirmation
Dimensions, weight, input requirements, cooling and connection arrangements are confirmed at quotation because they depend on the selected output voltage, current and total power. Very-high-current systems require a complete review of the output circuit and installation.

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