

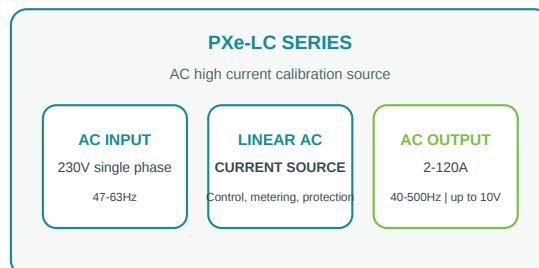
PXe-LC Series AC High Current Calibrator

Programmable AC current source | 2-120A | 0-10V AC | 40-500Hz

PX Electronics **PXe-LC Series AC High Current Calibrators** provide a controlled high-current AC source for calibration, verification and electrical test applications.

The **PXe-110001.2LC** provides adjustable AC current from **2 to 120A**, with programmable frequency from **40 to 500Hz** and up to **10V AC** available across the connected test circuit. Linear amplification technology produces a clean sine-wave output for applications where stable high current and waveform quality are important.

Typical applications include **current sensor calibration, current transformer testing, current probe and clamp meter verification, ammeter calibration, current transducer testing and power-measurement channel verification**. RS485 Modbus communication allows the calibrator to be incorporated into automated laboratory and production test systems.



Where this product fits

The PXe-LC Series is designed for applications requiring controlled AC current at relatively low terminal voltage. Rather than operating as a general-purpose AC power supply, the unit is intended primarily as a **programmable high-current source for calibration and verification of current-measurement devices**.

It can also be used for current injection, relay and protection-device testing, transformer evaluation and other low-voltage high-current AC applications.

High-Current AC Calibration

2-120A adjustable AC output for current sensor, current transformer, probe, ammeter and transducer calibration.

Clean Waveform Generation

Linear amplification with pure sine-wave output and published THD of 0.8% at resistive load.

Automated Calibration Integration

RS485 Modbus supports computer, PLC and automated calibration or production test systems.

Input supply

230V AC +/-10% single phase, 47-63Hz

Current output

2-120A AC adjustable

Frequency

40-500Hz programmable in 0.1Hz steps

Waveform

Pure sine wave using linear amplification

Selection starting point

Confirm the device to be calibrated, required current and frequency, expected test-loop impedance, available compliance voltage, accuracy or reference-instrument requirements, test duration, output lead length and conductor size, connection method, remote-control requirements and required calibration documentation.

Calibration and Application Setup

A practical route from the available mains supply and calibration requirement to a valid high-current operating point

1. AC input

230V AC +/-10%, single phase;
47-63Hz.

2. Calibration point

Required AC current, output frequency
and allowable test voltage.

3. Test circuit

DUT impedance, lead resistance,
terminals, reference components and
duty cycle.

4. Measurement & integration

Local or RS485 Modbus control;
reference instrumentation and
documentation.

Available configuration

Parameter	PXe-110001.2LC configuration
Input supply	230V AC +/-10%, single-phase
Input frequency	47 to 63Hz
Output voltage	0 to 10V AC adjustable
Output current	2 to 120A AC adjustable
Output frequency	40 to 500Hz programmable
Waveform	Pure sine wave
Conversion technology	Linear amplification
Local measurement	Voltage, current, RMS current, frequency, power and power factor
Communication	RS485 Modbus
Enclosure	IP20

High-Current Calibration Connections

At currents up to 120A, the complete test loop becomes an important part of the calibration arrangement. Output leads, terminals, contact resistance, reference shunts where used and the impedance of the device under test all contribute to the voltage required to establish the selected current.

Calibration loop considerations

Required calibration current
DUT resistance / impedance
Reference shunt or measurement device, where used
Test lead length and conductor cross-section
Terminal and connection resistance
Connection security
Test duration and duty cycle
Cable and fixture heating

10V Compliance Voltage

The PXe-LC provides up to **10V AC** to establish the selected current through the complete test loop.

A test requiring 120A through a circuit with excessive impedance may require more voltage than the calibrator can provide.

Practical consequence: define the complete calibration loop, not only the device under test, when confirming the operating point.

Typical Calibration and Test Applications

Current sensor calibration	Current transformer testing	AC current probe verification
Clamp meter calibration	Ammeter calibration	Current transducer testing
Current shunt verification	Power analyser current-channel checks	Energy meter current-input testing
Relay current injection	Transformer and magnetic testing	Automated production testing

Calibration Performance and Control

Source, measurement and integration data for the PXe-LC Series AC High Current Calibrator

Specification	PXe-LC Series	Specification	PXe-LC Series
Capacity	1.2kVA	Input voltage	230V AC +/-10%, single phase
Input frequency	47 to 63Hz	Output voltage	0 to 10V AC adjustable
Output current	2 to 120A adjustable	Output frequency	40 to 500Hz, 0.1Hz steps
Circuit mode	Linear amplification technology	Waveform	Pure sine wave
Voltage regulation	+/-0.1%	Load regulation	+/-0.5%
Frequency regulation	+/-0.01%*	THD	0.8% at resistive load
Voltage resolution	0.1V	Current resolution	0.001A
Frequency measurement resolution	0.01Hz	Voltage measurement accuracy	0.5% FS + 5 digits
Current measurement accuracy	0.5% FS + 5 digits	Power measurement accuracy	0.8% FS + 5 digits
Frequency measurement accuracy	0.01% FS + 5 digits	Voltage setting accuracy	0.5% FS
Frequency setting accuracy	0.1% FS	Display	Voltage, current, RMS current, frequency, power, PF
Communication	RS485 Modbus	Protection	Overcurrent, overtemperature, short circuit, overload
Enclosure	IP20	Operating environment	0-40 deg C; 20-95% RH
Dimensions	430 x 550 x 440mm	Weight	60kg

Calibration Source Performance

Linear amplification provides a pure sine-wave AC source with published 0.8% THD at resistive load, voltage regulation of +/-0.1% and load regulation of +/-0.5%. The 40-500Hz range covers 50Hz, 60Hz and 400Hz calibration points.

Integrated Measurement

Local display provides voltage, current, RMS current, frequency, power and power-factor information. Published internal current measurement accuracy is **0.5% FS + 5 digits**, with current resolution of **0.001A**.

Remote Integration

RS485 Modbus allows the PXe-LC to be incorporated into computer-controlled calibration benches, PLC-based test systems and automated production test equipment.

High-Current Calibration Considerations

High-current calibration performance depends on the complete electrical loop. Lead resistance, terminal resistance, contact quality, reference components and device-under-test impedance all consume part of the available 10V compliance voltage. PX recommends defining the required calibration current, frequency, lead length, conductor cross-section, termination method, test duration and expected loop impedance before confirming an application.

Calibration and Specification Basis

The published specification includes current resolution and internal current measurement accuracy, but does not presently define a separate guaranteed **current-source setting accuracy or calibration uncertainty**.

Where formal calibration uncertainty or traceability is required, the PXe-LC should be used with an appropriate reference measurement instrument and the required calibration arrangement should be agreed at quotation.

Values shown are based on the manufacturer specification for the PXe-110001.2LC. Final configuration and application-specific verification requirements are confirmed at quotation.

* The source specification contains both +/-0.01% and 0.1% frequency-regulation entries. +/-0.01% is retained pending final technical confirmation.

PXe-110001.2LC Model Specification

AC High Current Calibrator | 2-120A | 40-500Hz | 0-10V AC

Defined AC High Current Calibrator Configuration

The **PXe-110001.2LC** is the currently defined PXe-LC configuration, providing a programmable high-current AC source for calibration, verification and electrical testing. Its 2-120A output, 40-500Hz frequency range and linear amplification stage make it suited to current-measurement devices and low-impedance test circuits where controlled AC current and waveform quality are important.

Technical data

Specification	PXe-110001.2LC
Capacity	1.2kVA
Phase	Single-phase input / single-phase output
Input voltage	230V AC +/-10%
Input frequency	47 to 63Hz
Output voltage	0 to 10V AC adjustable
Output current	2 to 120A adjustable
Output frequency	40 to 500Hz, programmable in 0.1Hz steps
Source technology	Linear amplification technology
Voltage regulation	+/-0.1%
Load regulation	+/-0.5%
Frequency regulation	+/-0.01%*
Waveform	Pure sine wave
Total harmonic distortion	0.8% at resistive load
Voltage resolution	0.1V
Frequency measurement resolution	0.01Hz
Current resolution	0.001A
Voltage measurement accuracy	0.5% FS + 5 digits
Current measurement accuracy	0.5% FS + 5 digits
Power measurement accuracy	0.8% FS + 5 digits
Frequency measurement accuracy	0.01% FS + 5 digits
Voltage setting accuracy	0.5% FS
Frequency setting accuracy	0.1% FS
Display	Voltage, current, RMS current, frequency, power and power factor
Communication	RS485 Modbus
Protection	Overcurrent, overtemperature, short circuit and overload
Enclosure	IP20
Operating temperature	0 deg C to 40 deg C
Relative humidity	20% to 95% RH
Dimensions	430 x 550 x 440mm
Weight	60kg

Specification Notes

* The source document contains both +/-0.01% and 0.1% frequency-regulation entries. The principal specification uses +/-0.01% pending confirmation of the final guaranteed value.

Current measurement accuracy refers to the PXe-LC internal measurement system. A separate guaranteed current-source setting accuracy or calibration uncertainty is not presently specified. Where traceable calibration is required, suitable reference instrumentation should be included in the calibration arrangement.

Calibration Support and Quotation Information

PX reviews the required current, device under test, test loop, reference measurement and integration requirements before confirming the application

Standard Configuration

PXe-110001.2LC: 1.2kVA, 230V single-phase input, 2-120A AC output, up to 10V AC compliance voltage, 40-500Hz programmable frequency, linear amplification and IP20 enclosure.

Communications and Automation

Standard RS485 Modbus interface supports external computers, PLCs and automated calibration or production test systems.

High-Current Output Connections

Where PX supplies output leads or test connections, define the required length, conductor size, current rating, termination method and connection to the device under test. Low-resistance connections become increasingly important at higher calibration currents.

Calibration and Factory Verification

Application-specific current and frequency points can be agreed for factory verification. Where formal calibration uncertainty or traceability is required, specify the required reference instrument, calibration method and supporting documentation at order stage.

Project support

Application Review

Calibration current, frequency, DUT impedance and complete test-loop assessment

Calibration & Verification

Agreed AC current and frequency operating points and reference measurement requirements

Documentation

Calibration records, factory verification and project-specific documentation

Integration

RS485 Modbus control and automated calibration-system requirements

Information required to prepare a quotation

Requirement	Information to provide
Calibration application	Current sensor, CT, probe, clamp meter, ammeter, transducer, shunt, power measurement channel or other DUT
Required current	Minimum, normal and maximum AC calibration current
Frequency	Required operating frequency between 40 and 500Hz
Test-loop impedance	Known DUT impedance and estimated lead, terminal and reference-component resistance
Compliance voltage	Expected voltage required to establish the maximum calibration current
Accuracy requirement	Required measurement uncertainty, reference instrument or traceability requirement
Duty cycle	Continuous operation, timed calibration point or repeated automated test
Test leads	Required length, conductor cross-section and termination method
Remote control	Local operation or RS485 Modbus integration
Documentation	Calibration certificate, factory verification or project-specific records

Model-Specific Confirmation

Because the available output voltage is limited to 10V, PX reviews the complete high-current calibration loop before confirming the intended operating point. Cable resistance, terminal resistance, reference components, DUT impedance and test duration can all affect the maximum achievable current.

For applications requiring a defined calibration uncertainty, the proposed reference measurement arrangement should also be reviewed before order.

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