

Single-Phase to Three-Phase Static Frequency Converters

PXe-130000-M Series | 1kVA to 60kVA

PX Electronics PXe-M Series Static Frequency Converters provide a stable, balanced three-phase AC output where only a single-phase mains supply is available. The range combines phase, voltage and frequency conversion within one solid-state system.

Typical configurations convert 220V, 230V or 240V single-phase input into a regulated three-phase output at 50Hz or 60Hz. Output voltage is matched to the connected equipment, including common 200V, 208V, 220V, 380V, 400V, 415V, 440V, 460V and 480V systems.



Typical PXe-M Series SFC cabinet; enclosure varies by rating.

Where this product fits

Suitable for sites where three-phase machinery or complete electrical equipment must operate from a single-phase supply. The converter can support compatible motors, transformers, heaters, control circuits and electronic power supplies, subject to load and starting-current review.

Typical applications

Imported machinery, workshops, laboratories, production equipment, pumps, compressors, marine service equipment and specialist electrical systems.

Conversion duties

Single-phase 50Hz to three-phase 60Hz, single-phase 60Hz to three-phase 50Hz, and project-specific voltage conversion.

Installation formats

Rack or compact construction for selected smaller ratings; floor-standing cabinets and mobile bases for larger systems.

Rated range
1kVA to 60kVA

Input phase
Single-phase AC

Output phase
Three phase, 3-wire or 4-wire

Duty
Continuous industrial operation

Selection starting point

Confirm the available single-phase voltage, frequency and maximum current, required three-phase output voltage and frequency, total connected load, motor or transformer starting current, neutral requirement, duty cycle and installation environment.

Configuration and model selection

A practical route from the available single-phase supply to the correct three-phase converter

1. Supply

Voltage, frequency and maximum available current

2. Load

Complete machine kVA, motors and inrush

3. Output

L-L/L-N voltage, frequency and neutral

4. Project

IP rating, controls, FAT and commissioning

Popular configurations

Model	Capacity	Output current	Typical 230V input / 400V output configuration
PXe-130001-M	1kVA	1.4A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130003-M	3kVA	4.3A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130006-M	6kVA	8.7A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130009-M	9kVA	13.0A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130015-M	15kVA	21.7A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130020-M	20kVA	28.9A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130030-M	30kVA	43.3A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130045-M	45kVA	65.0A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output
PXe-130060-M	60kVA	86.6A/phase	230V $\pm 10\%$, 50Hz, 1-phase input; 230/400V, 60Hz, 3-phase + N output

Input supply and sizing

Available output is limited by the current that can be drawn from the single-phase service. At 230V, a 60kVA load represents approximately 261A before converter losses. Starting current and protective-device capacity must be included in the assessment.

Order code example

PXe-130020-M-1P230V50-3P400V60N-20KVA-IP22-MC represents a 20kVA unit with 230V single-phase 50Hz input and 400V three-phase 60Hz output with neutral. Final selection must also account for complete machine load and starting current.

Technical specification

Typical M Series values. Final values are confirmed in the quotation and project specification.

1. Range and construction		2. Input	
Rated output	1kVA to 60kVA	Input voltage	220V, 230V or 240V AC $\pm 10\%$; alternatives on request
Input / output phase	Single-phase input; three-phase 3-wire or 4-wire output	Input frequency	50Hz or 60Hz $\pm 5\%$
Conversion method	Solid-state AC-DC-AC double conversion using IGBT PWM	Supply assessment	Maximum site current, protective device and cable capacity reviewed before selection
Isolation	Integrated output transformer isolation	Starting demand	Motors, compressors and transformers assessed using inrush as well as continuous load
Construction	Rack, compact enclosure, trolley or floor-standing cabinet	Power factor	Confirmed for the selected model and connected load
Cooling	Variable-speed forced-air cooling with filtered intake and rear exhaust	Input harmonic mitigation	Filtering and project-specific mitigation available following review
3. Output performance		4. Protection, control and environment	
Output voltage	115/200V, 120/208V, 127/220V, 220/380V, 230/400V, 240/415V, 254/440V or 277/480V L-N/L-L	Protection	Overcurrent, overload, overvoltage, overtemperature and short-circuit protection, with alarms and indicators
Output frequency	Fixed 50Hz or 60Hz; selected 400Hz configurations following technical review	Interfaces	None as standard; RS232C, RS485, Ethernet or GPIB optional
Voltage accuracy	$\leq \pm 1\%$ full scale	Display / metering	Digital frequency, voltage, current, power and power-factor indication
Frequency accuracy	$\leq \pm 0.1\%$ full scale	Enclosure	IP22 standard; IP32 and IP54 optional
Waveform / THD	Pure sine wave; THD $\leq 3\%$ with a linear load	Environment	Operating -10°C to 55°C ; ambient -10°C to 45°C ; 10-90% RH non-condensing; altitude up to 1,800m
Overload / crest	100% continuous; 101-200% shutdown within 200ms; 3:1 crest factor	Efficiency / reliability	Overall efficiency $\geq 85\%$; MTBF 50,000 hours; MTTR less than 30 minutes
Specification basis		Dimensions and weight	
Values shown are typical for the PXe-M Series. Exact input current, regulation, overload performance, interfaces and environmental limits are confirmed after the connected load and available single-phase supply have been reviewed.		Dimensions and weight are issued at quotation stage because rating, input current, transformer arrangement, enclosure/IP rating, cooling, mobility, cable entry and selected options affect the final construction.	
		Documentation and compliance	
		Each system is supplied with a project specification, operating manual and Certificate of Conformity. Drawings and FAT records are supplied where included. CE marking and applicable standards are confirmed for the selected configuration.	

Options, project support and quotation information

Configuration choices are reviewed against the single-phase supply, connected load and project evidence required.

Mechanical and enclosure options

IP32 or IP54 construction, conformal coating, selected rack-mounted formats, floor cabinets, mobile bases, special cable entry, gland plates and customer-defined terminal arrangements.

Control and monitoring options

RS232, RS485, Ethernet, HMI, volt-free contacts, external metering, remote panels, watchdog monitoring, data logging and controlled restart logic.

Electrical and power-quality options

Alternative input and output voltages, three-wire or four-wire output, selected 400Hz configurations, input filtering, harmonic mitigation, protection coordination and project-specific EMC filtering.

Testing and site support

Optional FAT, customer or third-party witness testing, load-step testing, commissioning visits, engineer training, drawings, manuals, Certificate of Conformity and support records.

Project support

FAT

Optional load and functional testing

Witness testing

Customer or third-party attendance

Commissioning

Available for larger and commercial systems

After-sales

Seven-day technical support where required

Information required to prepare a quotation

Supply

Input voltage, frequency and maximum current

Output

L-L/L-N voltage, frequency and neutral

Load

Complete load kVA, motors and inrush

Duty

Continuous, cyclic and starting sequence

Installation

IP rating, cooling, cable access and mobility

Controls

Interfaces, interlocks and monitoring

Lead times, dimensions and weight

Standard products are typically 3-5 weeks. Customer-defined, larger-kVA or multi-unit systems are commonly 6-8 weeks, subject to quantity and specification. Dimensions and weights are issued at quotation stage for the exact configuration.

Discuss your requirement

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