

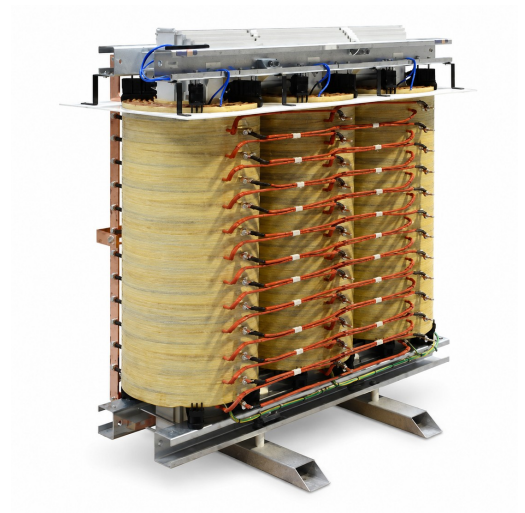
PXe-C Series External Transformer Options

Voltage matching | interface transformers | multi-pulse input transformers

PX Electronics can supply **additional external transformer options for PXe-C Series Static Frequency Converters** where a project requires voltage adaptation, a particular site or load interface, harmonic mitigation or another installation-specific transformer function.

These transformers **complement the SFC and do not replace the integrated transformer isolation already provided within the PXe-C Series**. The converter remains a complete transformer-isolated Static Frequency Converter in its own right.

A typical example is a 440V site supply feeding a C-Series converter configured for 400V input. An external 440/400V transformer matches the site voltage to the converter, while the SFC retains its normal frequency conversion, regulation, protection and internal isolation.



IMPORTANT: ADDITIONAL TRANSFORMER OPTION

PXe-C Series Static Frequency Converters already incorporate transformer isolation as part of the standard converter design. The transformer options shown here are additional system components used for site voltage matching, load adaptation, a specific winding or neutral arrangement, multi-pulse input operation or another defined project requirement.

Site Voltage Matching

Match non-standard site supplies to the selected SFC input, including common arrangements such as 440V to 400V and 480V to 400V.

Specific Electrical Interface

Provide a required vector group, neutral point or winding arrangement where existing distribution or connected equipment demands it.

Multi-Pulse Input

Purpose-designed phase-shifting transformers can support suitable multi-pulse rectifier arrangements for improved input harmonic performance.

Typical role

External system interface

Voltage examples

440/400V | 480/400V

Installation

Input, output or rectifier stage

Integration

Matched to C-Series duty

Selection starting point

Confirm the purpose of the external transformer, SFC rating, available site voltage and frequency, required secondary voltage, load type, vector group or neutral requirements, installation environment, enclosure and any multi-pulse or monitoring requirements.

Transformer Options and System Role

Additional transformer functions around the PXe-C Series

1. SITE SUPPLY

Voltage, frequency, phase and earthing arrangement.

2. TRANSFORMER ROLE

Voltage matching, interface or multi-pulse requirement.

3. PXe-C SERIES

Converter input, rating, duty and integrated isolation.

4. CONNECTED LOAD

Required voltage, frequency, load type and inrush.

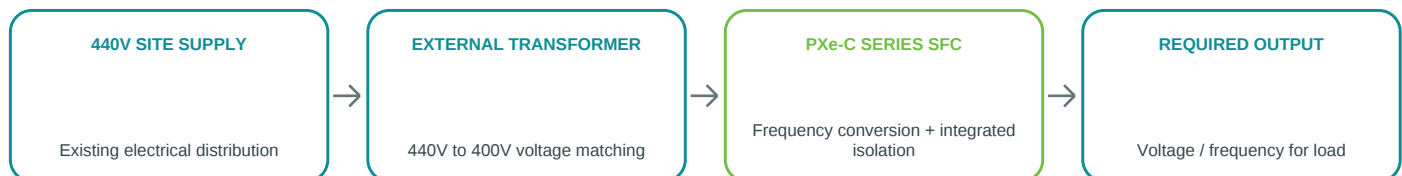
Available transformer options

Transformer option	Additional function	Typical PXe-C Series application
Voltage-Matching Transformer	Changes site or load voltage using separate windings.	Example: 440V site supply feeding a C-Series SFC configured for 400V input.
Voltage-Matching Autotransformer	Compact voltage adaptation without an additional isolated transformer stage.	Useful where only voltage matching is required and the site earthing arrangement permits it.
Interface Transformer	Provides a required vector group, neutral arrangement or electrical interface.	Integration with existing plant distribution or equipment requiring a defined winding configuration.
Multi-Pulse Transformer	Provides phase-shifted supplies for multiple rectifier bridges.	Multi-pulse C-Series input configurations where improved input harmonic performance is required.
Special-Environment Transformer	Provides the required electrical interface in construction suited to the installation.	Marine, humid, dusty, warm or otherwise demanding industrial installations.

Typical voltage-matching arrangements

Available supply	External transformer function	PXe-C Series / load interface
440V three-phase	440V to 400V voltage matching	400V C-Series input
480V three-phase	480V to 400V voltage matching	400V C-Series input
415V three-phase	Project-specific voltage adaptation	Selected SFC input voltage
400V SFC output	Output voltage adaptation where required	208V, 230V, 440V or 480V equipment

Example system arrangement



The external transformer performs only the additional interface function required by the installation. The PXe-C Series continues to provide its normal frequency conversion, regulation, protection and integrated transformer isolation.

System Configuration and Engineering Considerations

External transformer selection is part of the complete SFC system design

Information required for transformer selection

Selection parameter	Information required
Purpose of transformer	Voltage matching, load interface, vector-group requirement, neutral arrangement, multi-pulse input or another defined system function.
Transformer position	Ahead of the SFC input, after the SFC output or as part of a multi-pulse rectifier arrangement.
SFC rating	Continuous converter kVA together with expected overload and starting-current requirements.
Site supply	Available voltage, frequency, phase arrangement, tolerances and earthing system.
Required secondary voltage	Voltage required at the SFC input or connected load.
Vector group and neutral	Required winding connection, neutral provision and phase displacement.
Connected load	Load type, continuous power, power factor and starting or inrush requirements.
Environment	Indoor, marine, dusty, humid, high-temperature or other special operating conditions.
Enclosure and cooling	Open transformer for protected integration or enclosed assembly; natural or forced-air cooling as required.
Monitoring	Temperature sensors or other transformer condition monitoring where required.

Transformer rating and duty

The external transformer should be selected around its **actual system duty**, rather than simply assigning the same nominal kVA as the SFC without review. PX considers continuous load, transformer losses, power factor, starting current, SFC overload requirements, ambient temperature, cooling, enclosure, harmonic loading and operating duty.

Enclosure Protection

Open construction may be used within a suitably protected installation. Enclosed IP23, IP44 or IP54 configurations can be considered where required.

Winding Construction

Copper or aluminium windings can be selected according to transformer design, dimensions, mass, losses and project requirements.

Temperature Monitoring

Temperature sensors can be incorporated into suitable designs for local indication, alarm circuits or wider system monitoring.

Marine & Demanding Sites

Construction can be adapted for marine, humid, dusty, warm or otherwise demanding installations where the project requires it.

IMPORTANT FREQUENCY CONSIDERATION

The external transformer must be designed for the frequency present at the point where it is installed. Conventional industrial transformer configurations are normally selected for 50Hz or 60Hz operation. Where a transformer is required on a 400Hz SFC output, PX will specify a transformer designed specifically for the required frequency, voltage, current and connected load.

Example 63kVA 440V to 400V Transformer

External input voltage-matching configuration for a PXe-C Series system

Defined example configuration
This three-phase transformer illustrates a practical external interface where the available site supply is 440V and the selected PXe-C Series SFC requires a 400V input. The transformer performs the voltage adaptation only; the SFC retains its own integrated transformer isolation.

Technical data

Specification	Example 63kVA configuration
Rated power	63kVA
Phases	Three-phase
Primary voltage	440V
Secondary voltage	400V
Primary winding	Delta (D)
Secondary winding	Star with neutral (yn)
Connection group	Dyn5
Frequency	50Hz
Minimum ambient temperature	-5 deg C
Maximum ambient temperature	40 deg C
Temperature rise / insulation class	F / F
Design / environmental class	Land C1 / E0
Duty type	S1 continuous
Cooling	AN natural air
Impregnation	VPI
Winding material	Aluminium / aluminium
Electrostatic shield	Yes
Protection degree	IP00
Approx. dimensions	540 x 375 x 500mm
Approx. weight	230kg
Applied standard	PN-EN 60076-11

System role

A 63kVA transformer provides a practical nominal starting point for a 60kVA C-Series voltage-matching application, subject to confirmation of the connected load, overload requirement, ambient conditions and transformer losses. Final selection is completed as part of the overall SFC system review.



Example specification only. Transformer voltage ratio, rating, vector group, enclosure, winding material, cooling and monitoring can be configured around the actual PXe-C Series installation.

Project Support and Quotation Information

Transformer configuration is reviewed against the SFC, site supply, load and installation

Voltage Matching

Define the available site supply, selected C-Series input and required load voltage. PX reviews the correct transformer position and voltage ratio.

Multi-Pulse Integration

Where harmonic mitigation is required, the phase-shifting transformer and SFC rectifier arrangement are engineered as a coordinated system.

Environmental Construction

Enclosure, winding material, cooling and monitoring can be selected around the actual indoor, marine or industrial installation.

Factory Documentation

Project-specific technical data, transformer drawings and agreed verification information can be included with the supplied system documentation.

Project support

Application review	System engineering	Documentation	Integration
Site supply, transformer role and load	Voltage, vector group and duty	Technical and project-specific records	C-Series, protection and monitoring

Information required to prepare a quotation

Requirement	Information to provide
SFC model / rating	PXe-C model or required converter kVA.
Transformer purpose	Voltage matching, interface requirement, multi-pulse input or other specific function.
Primary voltage	Nominal site or SFC output voltage and tolerance.
Secondary voltage	Required SFC input or connected-load voltage.
Frequency	50Hz, 60Hz, 400Hz or other required operating frequency.
Load	Continuous kVA, load type, power factor and starting/inrush characteristics.
Electrical arrangement	Required vector group, neutral and earthing arrangement.
Installation	Environment, enclosure protection, ambient temperature and available space.
Monitoring	Temperature sensors or other monitoring requirements.

C-Series isolation remains standard

External transformer options are supplied only where the wider installation needs an additional voltage, interface, harmonic or environmental function. They do not replace the integrated transformer isolation within the PXe-C Series SFC.

Discuss your requirement

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