ISOLATION TRANSFORMER: COMPUTER SHIELD

ADVANCED POWER PROTECTION FROM HARMONICS AND POWER DISTURBANCES

PROTECTION FROM LOAD-GENERATED HARMONICS

The most common method used today to improve the infrastructure of a building distribution system to handle harmonic heating is to simply increase the size of the distribution transformer. With the increasing percentage of distributed micro computers and switch mode power supplies (SMPS) throughout the facility, this practice of simply oversizing a transformer masks a growing problem. PDI's Computer Shield transformers protect your equipment from power disturbances caused by load generated harmonics which can disrupt critical processes, damage equipment and cause expensive shutdowns.

ASSURED PERFORMANCE

With standard features like all copper windings and double sized neutrals, PDI's Computer Shield technology delivers superior performance and unsurpassed equipment protection. Designed and tested to PDI's stringent quality assurance standards, each unit is guaranteed to provide:

- superior common-mode noise protection
- superior transverse-mode noise protection
- transient protection (with optional TSN)
- non-linear load protection

THE QUAD-WYE® ADVANTAGE

Your system can be further enhanced with PDI's optional Quad-Wye® technology. The Quad-Wye® solves harmonic problems by canceling destructive load generated triplens and non-triplens. This patented technology converts three phase input power to multi-phase outputs. By distributing your loads over these outputs, which are phase shifted internally, the Quad-Wye® forces the natural cancellation of the harmonics. Although imitated by others, the individual outputs of PDI's Quad-Wye® are the highest rated in the industry, thus providing maximum performance without sacrificing system capacity.

QUAD-WYE®: HARMONIC CANCELLATION EFFECT

Harmonic	2 Outputs	3 Outputs	4 Outputs
1	Pass	Pass	Pass
3	Cancel	Cancel	Cancel
5	Cancel	Cancel	Cancel
7	Cancel	Cancel	Cancel
9	Cancel	Cancel	Cancel
11	Pass	Cancel	Cancel
13	Pass	Cancel	Cancel
15	Cancel	Cancel	Cancel
17	Cancel	Pass	Cancel
19	Cancel	Pass	Cancel
21	Cancel	Cancel	Cancel
23	Pass	Cancel	Pass
25	Pass	Cancel	Pass

The chart represents the harmonic cancellation performance by the output design. Refer to "PDI Switcher Solutions" publications for load balancing vs. cancellation performance.

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SPECIFICATIONS

Ratings

- kVA Ratings: 15-300 kVA
- K Factor: specifiable K1 through K30
- 6 Compensation Taps (4 FCBN, 2 FCAN)
- Input: 3-phase, 3 wire plus ground
- Input Voltage @ 50 Hz: 415 or 380V
  @ 60 Hz: 600, 480 or 208V
- Output: 3-phase, 4 wire plus ground
- Output Voltage @ 50 Hz: 415/240 or 380/220V
  @ 60 Hz: 600, 480 or 208/120V
- Harmonic Distortion: none added *(consult factory for other ratings)*

Features

- Copper wound construction - better conducting and more resilient than aluminum
- Dual electrostatic shield - attenuates high frequency noise
- Natural convection cooling
- Operating Efficiency: 98% typical
- Oversized neutral for non-linear loads
- Common mode noise protection
- Transverse mode noise protection
- UL Listed, CSA Certified

Enclosure

- Drip-proof NEMA 1
- Removable front and rear panels

Operating Conditions

- Operating Temperature: ambient 0°C to 40°C
- Storage Temperature: ambient -10°C to +40°C
- 50 Hz Operating Range: 47-53 Hz
- 60 Hz Operating Range: 57-63 Hz
- Relative Operating Humidity: 90% non-condensing

Warranty

- 12 years prorated – the industry's best

PDI

creating the perfect wave

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25 years

COMPUTER SHIELD OPTIONS

Transient Suppression Network (TSN)

This feature provides an integrated system designed and engineered to meet ANSI/IEEE category C standards for transient voltages and surge currents.

Lightning Arrestor/Surge Suppressor

The Lightning Arrestor and Surge Suppressor option protects the major insulation of the magnetics from high energy surges that are associated with lightning discharges. The suppressor circuit reduces the rate of rise of high energy transient voltages, thereby increasing the effectiveness of the Lightning Arrestor.

Energy Star

PDI is an approved Energy Star Manufacturer.

Optional Transformers Features

- Temperature rise at 130°C, 115°C, and 80°C rise.
- Zero degree Phase Shift Transformer available
- Thermal warning and shutdown sensors

The Quad-Wye® Option

PDI's Quad-Wye® technology cancels destructive load-generated current harmonics and improves power factor and low voltage distortion.

The Quad-Wye® non-linear load protection:

- cancels triplen and non-triplen harmonics
- eliminates current distortion problems
- prevents voltage distortion due to:
  - core saturation
  - high crest factor
  - high impedance
- improves power factor and reduces kW consumption
- has the greatest output winding capacity in the industry
- increases UPS capacity
- UL listed, CSA certified

PDI offers over 800 different Computer Shield configurations. Couple these with PDI's TVSS line to ensure system reliability.