

Drive TransFilter™

Harmonic Mitigating Transformer for Motor Drive Loads

A Solution for Voltage Distortion Problems

PRODUCT BENEFITS

- Provides isolation from upstream transients
- Eliminates phase-to-ground voltage excursions at the motor drive
- Reduces voltage distortion to less than 5%THDv
- Assures system compatibility with non-linear electronic drives
- Reduces 'penalty losses' due to drive-generated harmonic currents
- Reduces power costs
- Reduces harmonic current injection into the PPC (IEEE Std 519-1992)
- Exceeds NEMA TP1-2002 & CSA C802.2-00 linear efficiency requirements
- Optional *e-Rated*® unit exceeds the preceding efficiency requirements under non-linear motor drive loading
- Provides an attractive 'payback' and return-on-investment



PRODUCT DESCRIPTION

Drive TransFilters™ are high efficiency, three-phase, four-wire, single or multiple-output drive isolation transformers that have been specifically designed to supply three-phase, three-wire, non-linear adjustable speed drives (ASD). Although not specifically required by the ASD, the X_0 terminal of these transformers are normally grounded in order to prevent phase-to-ground voltage excursions beyond the $\sqrt{3}$ values, a common cause of ASD failure.

These transformers mitigate the power quality problems associated with three-phase, six- and twelve-pulse drives. Unlike conventional drive isolation transformers, which are only intended to provide positive- and negative-sequence impedance, and isolation, Type 'DD' transformers will cancel the 5th, 7th, 11th, 13th, 17th, 19th, --- positive- and negative-sequence harmonic currents on their common primary bus or within their multi-output secondary windings. They are available in a number of standard primary-to-secondary phase-shifts so that

they may be used to create twelve-, eighteen- or twenty-four-pulse systems.

Drive TransFilters™ are supplied with an off-load tap-changer that provides for the on-site adjustment of the transformer's output voltage.

When correctly applied, **Drive TransFilters™** will reduce peak phase current, average phase current, current distortion (THDi), voltage distortion (THDv), load K-Factor, system losses and overheating, and will increase system capacity and power factor. These units will also prevent the misoperation of electronic protective devices.

The ROI, payback and power quality benefits, associated with **Drive TransFilters™**, are maximized when applied as part of **The PQI Solution™**, an engineered system solution.



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SELECTION TABLES

kVA	Enclosure Size (Inches)	Weight (lbs.) *
8	20.25W x 13.50D x 18.25H	160
11	20.25W x 18.25D x 26.50H	225
14	20.25W x 18.25D x 26.50H	240
20	20.25W x 18.25D x 26.50H	330
27	20.25W x 18.25D x 26.50H	350
34	20.25W x 18.25D x 26.50H	370
40	24.50W x 21.50D x 31.50H	445
51	24.50W x 21.50D x 31.50H	510
63	24.50W x 21.50D x 31.50H	790
75	30.75W x 27.75D x 30.75H	850
93	30.75W x 27.75D x 30.75H	970
118	30.75W x 27.75D x 30.75H	1150
145	40.00W x 31.00D x 44.00H	1430
175	40.00W x 31.00D x 44.00H	1510
220	40.00W x 31.00D x 44.00H	1690
275	40.00W x 31.00D x 44.00H	1980
330	40.00W x 31.00D x 44.00H	2450
440	46.00W x 40.00D x 62.00H	2620
550	46.00W x 40.00D x 62.00H	2850
660	60.00W x 45.00D x 67.00H	3650
775	60.00W x 45.00D x 67.00H	4150
880	73.00W x 45.00D x 78.00H	4750
990	73.00W x 45.00D x 78.00H	6150
1100	73.00W x 45.00D x 78.00H	6450
Other up to 3500kVA		* = Approx

The above weights and measures apply to single output configurations up to 600V with a NEMA 1 enclosure and a standard temperature rise (150°). Multiple output units and some options may change the enclosure size and weights. Consult PQI for detailed product information for these and other configurations. Enclosure provided will be determined by PQI unless otherwise specified.



PQI Warranty - 10 years pro-rated.

All specifications are subject to change without notice. Revision 2, September 2007
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TECHNICAL SPECIFICATIONS

UL Listed
 CSA Approved
 Related Standards: CSA C9-M1981, CSA 22.2 No.47-1977
 CSA C802.2-00, UL-506, ANSI C75.110
 NEMA ST-20, NEMA TP-1
 Voltage Class: 1.2kV [Standards to 35kV]
 BIL Rating: 10kV [Standard for Class]
 Voltage: 480:277/480 [Standards to 35kV]
 Frequency: 60Hz [50Hz][400Hz][Other]
 Type: ANN
 Temp. Rise: 150° C [130°C][115°C][80°C][Other]
 Insulation Class: 220° C

Definitions

Type: DD (Delta : Modified Wye)
 ANN: Cooling Medium – Air
 Hz: Frequency
 kVA: Power Rating of Transformer
 PV: Primary Voltage
 SV: Secondary Voltage
 Temp: Temperature Rise: 150°C (Standard)
 [130°C][115°C][80°C][Optional]

Options

Phase Shift: 0°, 15°, 20°, 30°, 40°, 45° [Other]
 Efficiency TP1-2002: TP
e-Rated®: ER
 Enclosure NEMA 1: N1 (Standard)
 NEMA 3R: N3R (Optional)
 Other (Optional)
 Electrostatic Shield: ES – Single
 2ES – Dual
 3ES – Triple
 Thermal Sensors: TS
 Color: PQI White [ASA 61][Other]

Catalogue Number Configuration

Type & Phase Shift-Hz-kVA-PV:SV-Temp-Options

Sample Catalogue Number

DY15-60-093-480:277/480-150-N3R

