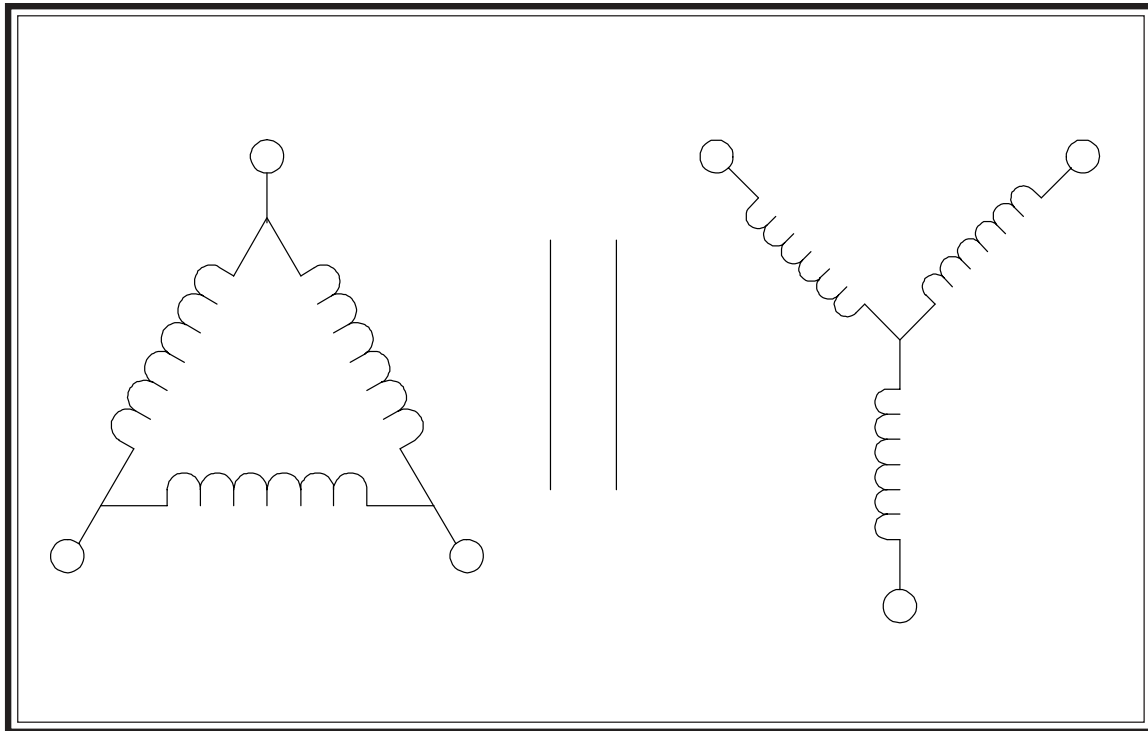


Three Phase Drive Isolation Transformers

Designed specifically for use with solid state power conversion equipment.



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Drive Isolation Transformer Specifications

Drivecon Corporation offers a complete line of K factor 4, three phase drive isolation transformers. These transformers are specifically designed to operate on supply line side with the non-linear load of an AC or DC variable speed motor drive. All transformers are designed and manufactured with the finest laminated cores and conductor material available. Optional copper or standard aluminum windings with +/- 2.5, 5% voltage taps. All transformers are Delta primary and WYE secondary. These transformers will provide complete voltage isolation for ground fault protection of equipment. All transformers are UL and CSA listed.

Specifications	
Primary voltage (Delta)	208, 230, 380, 415, 460, 600, 2400, 4160V. Others available upon request.
Secondary voltage (WYE)	230Y / 130V, 460Y / 270V. Others available upon request.
Frequency / phase	60 Hz, 3 phase. Others available upon request.
Distortion factor	K factor 4
Temperature rise	150°C
Insulation	220°C
Primary voltage taps	-2.5, -5, +2.5, +5%
Enclosure	Indoor, NEMA1. Others available upon request.
Construction	Dry type core and coil convection ventilation.
KVA rating	3-1250
Windings	Aluminum or copper (Optional)
Mounting	3-75KVA wall or floor. 93 KVA and larger floor only.
Options	Electrostatic shield, special taps, special enclosure, special finish.

Insulation System

Transformers are manufactured with insulating materials complying with UL/CSA Winding Insulation System Class 220* as follows:

Maximum acceptable temperature rise based on an average ambient of 30°C during any 24 hour period and a maximum ambient of 40°C at any time. Altitude not to exceed 3000 feet. (1000 m)

- Average winding temperature measured by rise of resistance = 150°C
- Hottest spot temperature rise winding = 180°C
- Maximum acceptable winding temperature = 220°C

* Class 220 is the highest insulation level recognized by the transformer industry.

Enclosures

- Fabricated from formed and flanged, extra heavy gauge sheet steel.
- Removable panels provide easy access to wiring terminals.
- Knockouts and lifting eyes provided.
- Efficient ventilating openings in enclosure provide optimum air circulation for long transformer life.
- Solid top cover protects transformer from spilled liquid and foreign matter.
- Sheet steel cabinets are phosphatized for rust and corrosion resistance. A baked-on coat of ASA61 gray enamel ensures attractive appearance and long life.
- Essential data is permanently recorded on UL/CSA approved nameplate.
- Special enclosures available upon request -NEMA3R, NEMA4, open core and coil.

Core and coil construction

Computer Aided Design (CAD) for optimum efficiency. Specialized construction techniques minimize core losses and noise.

Ratio of coil to core loss is selected for maximum operating efficiency.

Available with copper or aluminum windings.

Silicon, grain oriented, low loss steel laminations are precision cut, interlaced, formed, and rigidly secured for long quiet life and maximum operating efficiency. The laminations are stress relieved after stamping operation to maintain the superior magnetic characteristics.

Coil construction is integrated with insulating blocks for proper circulation of cooling air and long life. Efficient design and modern construction methods enable transformers to surpass all requirements of NEMA, UL and CSA standards.

Sound levels

High quality materials, design and construction methods mean quiet, dependable operation of all transformers. Core design, grain oriented silicon steel laminations, solid mechanical clamping and modern varnishes and impregnation methods all guarantee a rigid core assembly and minimum noise generation. Coils are formed into smaller, tighter units and rigidly secured to reduce the transmission of sound vibrations.

KVA	Drivecon Transformers	NEMA standards	CSA Standards 600V Class
0-9	40	40	40
10-50	45	45	45
51-150	50	50	50
151-300	50	55	55
301-500	55	60	60

Transformer taps

Taps are provided on the high voltage winding of transformers to compensate for variations in the supply voltage and to maintain a more even secondary output to the drive. The taps are rated at a fixed percentage of the nominal voltage, 2 1/2 or 5 percent above and below the normal primary voltage. All of the transformer taps are rated for the full KVA capacity of the transformer. Other taps available upon request. The best way to determine the correct tap is to measure the voltages at the primary and secondary terminals of the transformer under full load conditions. If the secondary voltage is more than three percent high or low, the primary connection must be moved to the appropriate terminal as shown on the diagram plate. We recommend that the primary and secondary voltages be measured at least once a year. Expansion of the local utility system and increases in plant loading generally affect the output of transformers necessitating a change in taps. Unregulated lines may result in sparatic tripping of solid state drives with high or low voltage faults.

Steps for selecting required three phase drive isolation transformer

1. Determine primary or supply voltage
2. Select secondary or load voltage from drive's rating.
3. Verify three phase operation.
4. Standard transformers are suitable for operation on a 60Hz system. Refer to factory for other frequencies.
5. Determine input KVA capacity of drive. Select a transformer having a standard KVA rating equal to or greater than that required by the drive or use the following calculation to size transformer.

$$\text{KVA} = \frac{\text{Supply Volts} \times \text{Input Amps}^* \times 1.73}{1000}$$

* Consult drive manufacturer for 3 phase input amp draw.

Standard 3 phase drive / transformer sizes			
Drive HP	KVA	Drive HP	KVA
1	3	50	63
2	3	60	75
3	6	75	93
5	8	100	118
7.5	11	125	145
10	14	150	175
15	20	200	220
20	27	250	275
25	34	300	330
30	40	400	440
40	51	500	550

Drive Isolation Transformer Standard Models

3 phase isolation transformers, aluminum windings indoor ventilated dry type, NEMA1 enclosure 220 °C insulation, 150°C temperature rise, manufactured to K-factor 4 specifications with +/- 2.5, 5% primary voltage taps.

VFD SIZE (HP)	TRANSFORMER KVA RATING	TRANSFORMER WEIGHT (LBS.)	PART NUMBER * (-C) OPTIONAL COPPER WINDINGS	DIMENSIONS H x W x D (inches)	MOUNTING
1	3	39	3DIT-3X/X(-C)	18x15x13	wall / floor
2	3	39	3DIT-3X/X(-C)	18x15x13	wall / floor
3	6	59	3DIT-6X/X(-C)	18x15x13	wall / floor
5	8	65	3DIT-8X/X(-C)	18x15x13	wall / floor
7.5	11	150	3DIT-11X/X(-C)	18x15x13	wall / floor
10	14	179	3DIT-14X/X(-C)	18x20x13	wall / floor
15	20	245	3DIT-20X/X(-C)	25x20x18	wall / floor
20	27	275	3DIT-27X/X(-C)	25x20x18	wall / floor
25	34	310	3DIT-34X/X(-C)	25x20x18	wall / floor
30	40	336	3DIT-40X/X(-C)	25x20x18	wall / floor
40	51	455	3DIT-51X/X(-C)	25x24x20	wall / floor
50	63	485	3DIT-63X/X(-C)	25x24x20	wall / floor
60	75	565	3DIT-75X/X(-C)	25x24x20	wall / floor
75	93	755	3DIT-93X/X(-C)	31x31x28	floor
100	118	820	3DIT-118X/X(-C)	31x31x28	floor
125	145	890	3DIT-145X/X(-C)	31x31x28	floor
150	175	1145	3DIT-175X/X(-C)	31x31x28	floor
200	220	1470	3DIT-220X/X(-C)	44x40x31	floor
250	275	1710	3DIT-275X/X(-C)	44x40x31	floor
300	330	1990	3DIT-330X/X(-C)	44x40x31	floor
400	440	2700	3DIT-440X/X(-C)	62x47x41	floor
500	550	3130	3DIT-550X/X(-C)	62x47x41	floor

* X/X specify primary and secondary voltage: 208, 230, 380, 415, 440, 460, 600 Delta / 230, 460 WYE 60 Hz.