DELTA
TRANSFORMERS
TRANSFORMATEURS

POWER YOUR FUTURE

CATALOG

NRCAN CSA C802.2 2018

Specialists in the design and manufacturing of innovative solutions.

With its Epoxy Vacuum Impregnation **E.V.I.** process, it provides superior quality products.

Committed to our environment

THE DELTA TOUCH

Synonymous with Quality

www.delta.xfo.com

DELTA TRANSFORMERS INC.

Founded in 1983, Delta Transformers Inc. has developed considerable expertise in the development of power, distribution and non linear load transformers over the years. With the contribution of its qualified employees, Delta Transformers Inc. has become a leader in the industry.

The values of Delta Transformers Inc. are conveyed through its Delta Touch Philosophy. Synonymous with quality, Delta Touch Philosophy guides the Delta Transformers Inc. performance:

- Customers First ... Quality always
- Innovative quality
- Products delivered on time
- A long-term partnership with our customers and suppliers

Its vision: to be recognized as the best in the field of electrical energy transformation in Canada.

Performance Products

Exceeding customers' needs, the Research & Development team is characterized by its innovative solutions, today, Delta Transformers Inc. offers the following product lines from its plant in Granby:

Distribution Transformers

- General Purpose Transformer
  - Copper or Aluminum
  - Single phase or Three phase
- Commercial Series Transformer
  - Institutional or Commercial Application
  - No option available
  - Economic solution
- Epoxy-potted Transformer
  - Humid or corrosive environments
- Mini Power Center
  - Compact solution
  - Proximity to load
  - Temporary or permanent installation
- Autotransformer
  - Common primary and secondary winding
  - Light and compact
  - More cost effective

Power Transformer

- Up to 35,000 V
- Up to 15,000 kVA
- Up to 150 kV BIL

Non Linear Load Transformer

- Drive Isolation Transformer
  - Optimal design
  - Oversized neutral conductor
  - Electrostatic Shield
- K-Factor Transformer
  Isolated Transformer
  Super Isolated Transformer
  - K-Factor (4, 9, 13, etc.)
  - Economic solution in high harmonic environments
  - High quality manufacturing
  - TVSS
  - Electrostatic Shield
- Computer Power Center
  - Compact
  - Proximity to load
  - Solution to harmonics mitigation
- Mitigator Series Transformer
  - Harmonic currents mitigation at low impedance
  - Field adjustable phase shift
  - Single or double output

MANUFACTURING STANDARD

Delta Transformers Inc. uses the highest quality materials available in the manufacturing of all its transformers such as copper, aluminum, magnetic steel and various insulators. In addition to being ISO 9001 : 2008 certified, Delta Transformers Inc. also tests and certifies its products based on recognized international standards. Delta Transformers Inc. also offers high quality with its Epoxy Vacuum Impregnation (E.V.I.) process. A manufacturing standard for over 20 years, it affords better mechanical strength, environmental protection and heat dissipation, while reducing the noise level of its transformers.

All of Delta's dry-type transformers are environmentally friendly. Some of its products also stand out for their energy efficiency, which meets the requirements of the National Resources Canada (NRCan) Office of Energy Efficiency program, which is aimed at protecting the environment and saving energy.

A STEP AHEAD OF THE COMPETITION !

In order to compare expected theoretical outcomes, Delta Transformers Inc. is one of a few Canadian manufacturers to have developed a non-linear test bench. The Engineering Department not only ensures that the products meet customers' expectations and needs, but also focuses its efforts on the continuous development of high-performance products.

For more information, you can contact us by one of the following options;

- Our local Manufacturer's Representative. "Refer to Delta Transformers Inc. Web Site" for complete info.
- Our local Authorized Distributors
- Web Site: **www.delta.xfo.com**
- Email at: **info@delta.xfo.com**
- Our Customer Service at:
- Phone: **1-800-663-3582**
- Fax: **1-877-449-9115**

FULL BREADTH OF BUSINESS OPPORTUNITIES WITH DELTA TRANSFORMERS

Including the benefits of Epoxy Vacuum Impregnation Process... **E.V.I.**

... a standard feature with all our products!!!

With a wide range of applications such as:

- New Installation
- Equipment Modernization
- Equipment Replacement
- Coordination with other Manufacturer's Equipment
- Harmonics Mitigation
- Harsh Environmental conditions

Delta Transformers Inc. provides the best solutions!

Technical expertise available...

- Project Specifications
- Joint Calls
- Plant Tours
- Presentations
- Training Sessions
- Table Top Events
- On Site Surveys
- Engineering Services

To satisfy your customer's expectations!

ALL YOUR NEEDS FULFILLED FROM A SINGLE TRANSFORMER MANUFACTURER

Including the benefits of Epoxy Vacuum Impregnation process... E.V.I.

Distribution Transformers	
Industrial Applications	Delta Transformers Inc. General Purpose Transformers
Economic and Compact Solutions	Autotransformers
Harsh Environmental Conditions	Epoxy Potted Transformers
Temporary or Permanent	Mini Power Centres
Commercial and Institutional Applications	Commercial COMMERCIAL
Harsh environment requirements and Stringent Industrial standards	Enviro-Guard Enviro-Guard

Non Linear Loads Transformers	
Predominant Non Linear Loads	K-Rated Transformers
Triplen Harmonics	Zero Sequence Transformers
5th, 7th, etc. Harmonics	Transformers with double outputs, special phase shifting
Field Adjustable Phase Shift	Mitigator Mitigator e-Series
Computer Applications	Computer Grade Isolated Transformers
Critical problems with noise and transients	Super Isolated Transformers
Motor Controls Multi Pulses (6,12,18…) Drives Soft Starters	Variable Speed Drive Transformers

Power Transformers	
Medium Voltage Applications	Consult with our technical sales representative
Up to 15,000 kVA, 35kV, 150kV BIL	K-Rated Load Profile
Nominal kVA Upgrade	Harmonics Mitigation
Stand Alone	M.V. Motor Control
Unit Substation Transformers	Other Manufacturer's Replacement / Spare Unit
Core and Coil Only	PCB Replacement

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

DISTRIBUTION

General Purpose Transformers
Copper or Aluminum Winding

General Purpose Transformers
Copper winding -
CDSC, CDTC, CD2C and CD6C Series
Aluminum winding -
CD2A and CD6A Series

Auto-Transformers - CATC Series

Line Current

Commercial - Series 2 & 6
DA2 and DA6 Series

SECTION 1

Enviro-Guard - Series 6
CD6C, XD6C Series
XD6C Certified class I Div. II

Mini Power Center
CCSC and CCTC Series

GENERAL PURPOSE TRANSFORMERS

Copper and **Aluminum** Winding

All Delta general purpose transformers meet the most stringent industrial standards on account of their optimal design, superior quality and ease of installation.

Quality Assurance

The Quality Assurance Department is separate from Production and Engineering in order to guarantee the independence required for maintaining strict quality control. Our quality assurance program complies with ISO standards and is available on all our transformers.

Electrical tests are performed in accordance with the standard specifications:

- Voltage ratio
- Dielectric tests
- No load and full load losses
- Resistance measurement
- Excitation current
- Heat run tests
- Noise level
- Polarity

In addition to electrical tests, mechanical inspections are carried out throughout the manufacturing process in order to maintain the dependability and quality of our products.

Computer-Aided Design (CAD)

DELTA Transformers are designed and produced with a specialized software developed by DELTA engineers and technicians.

This software enables us to execute the necessary mathematical operations and to design premium transformers, which will meet the requirements and specifications of industrial and institutional applications.

The software also allows us to anticipate potential production problems and to find suitable solutions prior to the manufacturing process, thus avoiding numerous delays. They are also used for the analysis of test results, in order to maintain a constant level of quality.

Features :

- Copper : 3 - 333 KVA - single-phase
  6 - 1000 KVA - three-phase
- Aluminum : 15 - 333 KVA - single-phase
  30 - 1000 KVA - three-phase
- 3 coil delta-wye (three-phase) or 2 coil (single-phase)
- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- High-quality grain-oriented steel laminations
- Insulation class 220
- Compact and easy-to-install enclosure
- Quiet operation
- Adequate ventilation

Connections

The three-phase delta-wye (three coil) connection is a standard feature on all three-phase general purpose transformers. The delta primary connection was designed to eliminate third homopolar harmonics (triplets) of a balanced load, which can be damaging to equipment connected upstream. Given an unbalanced load, the delta-wye connection will not create a noticeable voltage variation between phases, which means an ease in load combinations. Consequently, lighting and motor loads may be hooked up on a single unit without risk.

The terminal layout was designed to allow simple and quick connections to the transformer. All connections are located on the front of the transformer and are easily indentified.

Three-phase DELTA transformers are available in delta-wye, delta-delta, wye-wye or wye-delta configurations.

Enclosures

DELTA transformers are the most compact copper or aluminum wound product available on the market today.

The transformers are available in types 3R, 4 and sprinkler proof enclosures. Constructed of heavy-gauge steel, treated with a phosphate conversion coating, and then painted with an electrostatically applied baked paint (ASA 61 grey), transformers will be well protected against rust and corrosion.

Our standard enclosures were designed specifically to save floor space, and they include features such as :

- Base forklift points for easier handling
- Lifting eyes for easier installation (on small units)
- Sturdy support system available for wall-mounted units

E.V.I. Process (Epoxy Vacuum Impregnation) at no additional cost

Delta Transformers has set a new standard of excellence for transformer manufacturers across North America by treating all DELTA Transformers with epoxy vacuum impregnation.

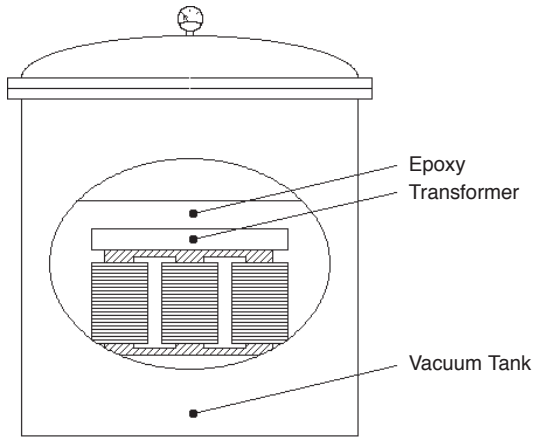
Benefits of E.V.I.

- Increased mechanical strength
- Improved long-term stability of core loss
- Improved heat dissipation
- Reduced noise
- Improved winding insulation
- Elimination of air bubbles

Why «Epoxy» rather than any other material?

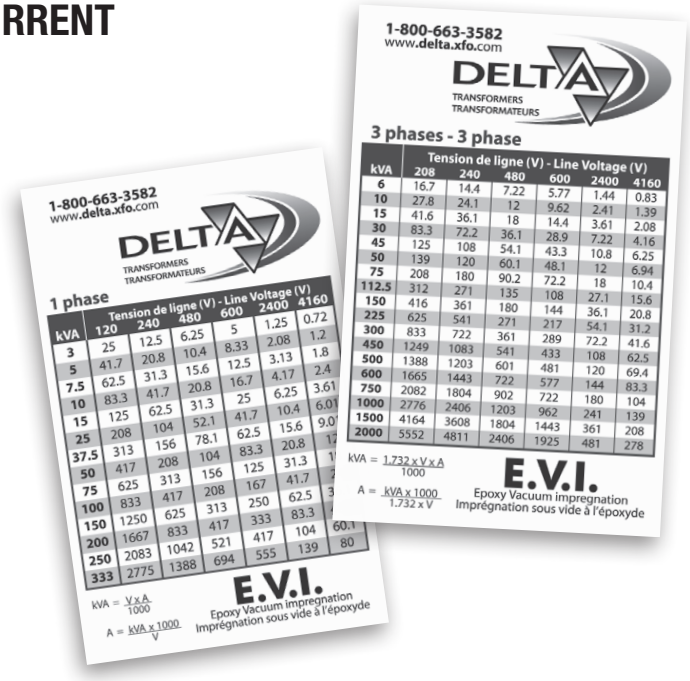
Although epoxy is popular because of its high resistance to adverse environmental conditions, it has many other less well-known and interesting characteristics, such as excellent dielectric insulation properties and lower temperature sensitivity since it can resist a temperature of 220°C without undergoing any changes in property. This resin-based product is ideal as a coating agent. In addition to their superior quality, transformers with E.V.I. have a longer life.

Why settle for less when you know that for the same price, you can have the DELTA E.V.I.



LINE CURRENT

(Amps)



1 PHASE

Line voltage (volts)						
KVA	120	240	480	600	2400	4160
3	25,0	12,5	6,25	5,00	1,25	0,72
5	41,7	20,8	10,4	8,33	2,08	1,20
7,5	62,5	31,3	15,6	12,5	3,13	1,80
10	83,3	41,7	20,8	16,7	4,17	2,40
15	125	62,5	31,3	25,0	6,25	3,61
25	208	104	52,1	41,7	10,4	6,01
37,5	313	156	78,1	62,5	15,6	9,01
50	417	208	104	83,3	20,8	12,0
75	625	313	156	125	31,3	18,0
100	833	417	208	167	41,7	24,0
150	1250	625	313	250	62,5	36,1
200	1667	833	417	333	83,3	48,1
250	2083	1042	521	417	104	60,1
333	2775	1388	694	555	139	80,0

3 PHASES

Line voltage (volts)						
KVA	208	240	480	600	2400	4160
6	16,7	14,4	7,22	5,77	1,44	0,83
10	27,8	24,1	12,0	9,62	2,41	1,39
15	41,6	36,1	18,0	14,4	3,61	2,08
30	83,3	72,2	36,1	28,9	7,22	4,16
45	125	108	54,1	43,3	10,8	6,25
50	139	120	60,1	48,1	12,0	6,94
75	208	180	90,2	72,2	18,0	10,4
112,5	312	271	135	108	27,1	15,6
150	416	361	180	144	36,1	20,8
225	625	541	271	217	54,1	31,2
300	833	722	361	289	72,2	41,6
450	1249	1083	541	433	108	62,5
500	1388	1203	601	481	120	69,4
600	1665	1443	722	577	144	83,3
750	2082	1804	902	722	180	104
1000	2776	2406	1203	962	241	139
1500	4164	3608	1804	1443	361	208
2000	5551	4811	2406	1925	481	278

$$\text{KVA (1 phase)} = \frac{\text{volts X amps}}{1\,000}$$

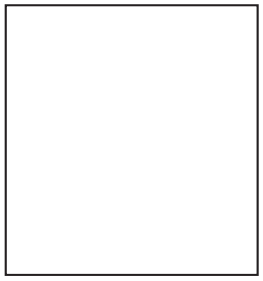
$$\text{Amps} = \frac{\text{KVA (1 phase) X 1 000}}{\text{volts}}$$

$$\text{KVA (3 phases)} = \frac{1{,}732 \text{ X volts X amps}}{1\,000}$$

$$\text{Amps} = \frac{\text{KVA (3 phases) X 1 000}}{1{,}732 \text{ X volts}}$$

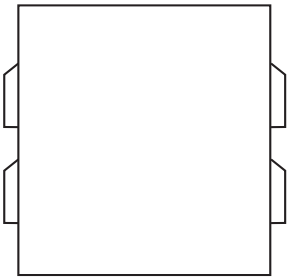
GENERAL PURPOSE TRANSFORMERS

Enclosure Configuration

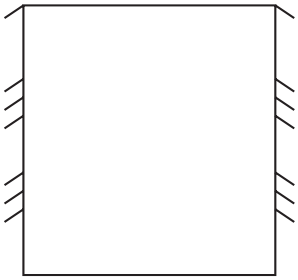


CSA type 1
(ventilated)

(indoor use)



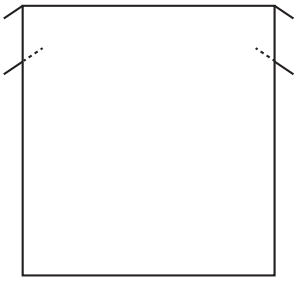
Commercial



General Purpose

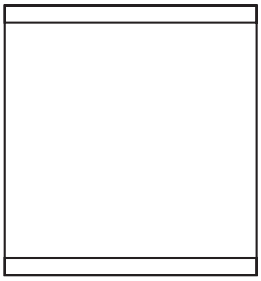
CSA type 2
(ventilated)

Drip-proof enclosure
(indoor use)



CSA type 3R
(ventilated)

Weather proof and sprinkler proof enclosure
(indoor and outdoor use)



CSA type 4
(non ventilated)

Weather tight and sprinkler proof enclosure

(indoor and outdoor use)

GENERAL PURPOSE TRANSFORMERS

Copper winding - **CDSC, CDTC, CD2C and CD6C Series**

The Ultimate in Durability and Dependability

General Purpose Transformers (distribution)

The DELTA general purpose transformers CDSC, CDTC, CD2C and CD6C Series of copper wound are superior quality products designed for the ultimate in dependability.

Designed by DELTA engineers through their specialized software, the compact DELTA CDSC, CDTC, CD2C and CD6C Series transformer are ideal for industrial, institutional or commercial applications where performance and reliability are essential.

Our single-phase and three-phase CDSC, CDTC, CD2C and CD6C transformers are manufactured to exacting standards, and a quality program complying with ISO 9001.

The electrolytic copper coils are wound, oval or rectangular configuration to allow a uniform circulation of air for superior cooling and efficient operation. The high quality grain-oriented steel laminations ensure reliable noise levels. The CDSC, CDTC, CD2C and CD6C Series transformers employ the E.V.I. process which ensures structural mechanical strength, a better heat dissipation, improved resistance to humid, salty and corrosive environments, improved dielectric properties and lower noise levels.

Features :

- 3 - 333 KVA - single-phase
- 6 - 1000 KVA - three-phase
- Copper winding
  (standard 3 coil delta-wye 3 phases)
- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- High-quality grain-oriented steel laminations
- Insulation class 220
- Compact and easy-to-install enclosure
- Quiet operation and adequate ventilation
- Manufactured to ISO standards upon request

GENERAL PURPOSE TRANSFORMERS

Single-phase - Copper winding - **CDSC and CD2C** Series

Copper Series CDSC and CD2C, Single-phase, Type 3R, Primary 600 V or 480 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
3*	W/F	CDSC0003**A6XXLD	25	635	15	381	13	324	92	42	45
5*	W/F	CDSC0005**A6XXLD	25	635	15	381	13	324	103	47	45
7.5*	W/F	CDSC0007**A6XXLD	25	635	15	381	13	324	121	55	45
10*	W/F	CDSC0010**A6XXLD	25	635	15	381	13	324	132	60	50
15	W/F	CD2C0015**A6XXLD	30	762	18	457	14	349	185	84	50
25	W/F	CD2C0025**A6XXLD	30	762	18	457	14	349	227	103	50
37.5	W/F	CD2C0037**A6XXLD	33	838	21	533	16	400	321	146	50
50	F	CD2C0050**A6XXLD	33	838	21	533	16	400	352	160	50
75	F	CD2C0075**A6XXLD	33	838	21	533	16	400	453	206	55
100	F	CD2C0100**A6XXLD	47	1194	25	616	23	583	631	287	55
150	F	CD1C0150**A6XXLD	51	1295	28	718	27	685	805	366	60
200	F	CD2C0200**A6XXLD	51	1295	28	718	27	685	1049	474	65
250	F	CD2C0250**A6XXLD	58	1473	32	820	30	761	1342	610	65

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE :	*3 - 10 kVA*	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*
	15 - 250 kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

STANDARD VOLTAGE
**(VK) 600 - 240/120 **(RK) 480 - 240/120

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

*** 3 to 10kVA these units are not regulated by CSA, C802 standard & NRCAN 2018**

GENERAL PURPOSE TRANSFORMERS

Single-phase - Copper winding - **CDSC and CD2C** Series

Copper Series CDSC and CD2C, Single-phase, Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
3*	W/F	CDSC0003**B6XXLD	25	635	15	381	13	330	104	47	45
5*	W/F	CDSC0005**B6XXLD	25	635	15	381	13	330	121	55	45
7.5*	W/F	CDSC0007**B6XXLD	25	635	15	381	13	330	121	55	45
10*	W/F	CDSC0010**B6XXLD	25	635	15	381	13	330	159	72	50
15	W/F	CD2C0015**B6XXLD	30	762	18	457	14	356	227	103	50
25	W/F	CD2C0025**B6XXLD	33	838	21	533	16	406	309	140	50
37.5	W/F	CD2C0037**B6XXLD	33	838	21	533	16	406	353	160	50
50	F	CD2C0050**B6XXLD	33	838	21	533	16	406	481	218	50
75	F	CD2C0075**B6XXLD	47	1194	25	635	23	584	616	279	55
100	F	CD2C0100**B6XXLD	51	1295	28	711	27	686	927	365	55
150	F	CD2C0150**B6XXLD	51	1295	28	711	27	686	1089	494	60
200	F	CD2C0200**B6XXLD	58	1473	32	813	30	762	1272	577	65
250	F	CD2C0250**B6XXLD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE:

3 - 10 kVA	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*	STANDARD VOLTAGE
15 - 250 kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*	**(VK) 600 - 240/120 **(RK) 480 - 240/120

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

*** 3 to 10kVA these units are not regulated by CSA, C802 standard & NRCAN 2018**

GENERAL PURPOSE TRANSFORMERS

Three-phase - Copper winding - CDTC and CD6C Series

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V or 480 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**A6XXBD	25	635	21	533	13	330	141	64	40
10*	W/F	CDTC0010**A6XXBD	25	635	21	533	13	330	159	72	45
15	W/F	CD6C0015**A6XXBD	26	660	18	464	15	375	214	97	45
30	W/F	CD6C0030**A6XXBD	31	775	23	578	18	451	341	155	45
45	W/F	CD6C0045**A6XXBD	31	775	23	578	18	451	407	185	45
50	W/F	CD6C0050**A6XXBD	31	775	23	578	18	451	441	200	45
75	W/F	CD6C0075**A6XXBD	37	940	28	705	22	552	674	306	50
112.5	F	CD6C0112**A6XXBD	37	940	28	705	22	552	978	398	50
150	F	CD6C0150**A6XXBD	46	1168	31	787	24	616	1069	485	50
225	F	CD6C0225**A6XXBD	53	1346	37	927	29	724	1533	695	55
300	F	CD6C0300**A6XXBD	53	1346	37	927	29	724	1843	836	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*6 - 10 kVA*	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*
	15 - 300 kVA	*2 x FCAN, 2 x FCBN*	*4 X 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams seeSection 7, page 20

*** 6 to 10kVA these units are not regulated by CSA, C802 standard & NRCAN 2018**

GENERAL PURPOSE TRANSFORMERS

Three-phase - Copper winding - CDTC and CD6C Series

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**B6XXBD	25	635	21	533	13	330	148	67	40
10*	W/F	CDTC0010**B6XXBD	Consult our Customer Service								
15	W/F	CD6C0015**B6XXBD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**B6XXBD	31	775	23	578	18	451	378	171	45
45	W/F	CD6C0045**B6XXBD	31	775	23	578	18	451	461	209	45
50	W/F	CD6C0050**B6XXBD	37	940	28	708	22	552	653	296	45
75	F	CD6C0075**B6XXBD	37	940	28	705	22	552	779	353	50
112.5	F	CD6C0112**B6XXBD	46	1168	31	787	24	616	985	447	50
150	F	CD6C0150**B6XXBD	46	1168	31	787	24	616	1172	532	55
225	F	CD6C0225**B6XXBD	53	1346	37	927	29	724	1851	840	55
300	F	CD6C0300**B6XXBD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*6 - 10 kVA*	*1 x FCAN, 1 x FCBN*	*2 x 2.5%*
	15 - 300 kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

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GENERAL PURPOSE TRANSFORMERS

Three-phase - Copper winding - **CD6C** Series

Copper Series CD6C, Three-phase, Type 3R, Primary 600 V or 480 V, Secondary 208Y / 120 V, 80° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6C0015**C6XXBD	Consult our Customer Service								
30	W/F	CD6C0030**C6XXBD	31	775	23	578	18	451	407	185	45
45	W/F	CD6C0045**C6XXBD	37	940	28	705	22	552	674	306	45
50	W/F	CD6C0050**C6XXBD	37	940	28	705	22	552	674	306	50
75	F	CD6C0075**C6XXBD	37	940	28	705	22	552	878	398	50
112.5	F	CD6C0112**C6XXBD	46	1168	31	787	24	616	1172	532	50
150	F	CD6C0150**C6XXBD	53	1346	37	927	29	724	1533	695	50
225	F	CD6C0225**C6XXBD	Consult our Customer Service								
300	F	CD6C0300**C6XXBD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

GENERAL PURPOSE TRANSFORMERS

Aluminum Winding **- CD2A** and **CD6A** Series

The Cost-Effective Alternative

Delta general purpose transformers CD2A and CD6A series of aluminum wound transformers offer an economical alternative to copper wound transformers.

Designed by Delta engineers through their specialized software, the compact Delta CD2A and CD6A series aluminum transformer design require virtually the same floor space as comparable copper units and substantially less space than other manufacturer's aluminum products.

Our single-phase and three-phase CD2A and CD6A series transformers are manufactured to exacting standards, and our quality assurance program complies with ISO standards and is available upon request.

The electrolytic coils are wound in a circular configuration to allow a uniform circulation of air for superior cooling and efficient operation. The high quality grain-oriented steel laminations ensure reliable sound levels. The CD2A and CD6A series transformers employ the E.V.I. process which ensures structural mechanical strength, a better heat dissipation, improved resistance to humid, salty and corrosive environments, improved dielectric properties, and lower noise levels.

Features :

- 15 - 333 KVA single-phase;
- 15 - 600 KVA three-phase
- Aluminum winding
  (standard 3 coils delta-wye three-phase)
- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- High-quality grain-oriented steel laminations
- Insulation class 220
- Compact and easy-to-install enclosure
- Quiet operation and adequate ventilation
- Economical alternative
- Manufactured to ISO standards upon request

GENERAL PURPOSE TRANSFORMERS

Single-phase - Aluminum winding **- CD2A** Series

Aluminum Series CD2A, Single-phase, Type 3R, Primary 600 V or 480 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD2A1015**A6XXLD	30	762	18	457	14	349	169	77	50
25	W/F	CD2A0025**A6XXLD	33	838	21	533	16	400	227	103	50
37.5	W/F	CD2A0037**A6XXLD	33	838	21	533	16	400	277	126	50
50	F	CD2A0050**A6XXLD	33	838	21	533	16	400	350	159	50
75	F	CD2A0075**A6XXLD	47	1194	24	616	23	583	486	221	55
100	F	CD2A0100**A6XXLD	47	1194	24	616	23	583	572	260	55
150	F	CD2A0150**A6XXLD	51	1295	28	718	27	685	814	371	60
200	F	CD2A0200**A6XXLD	58	1473	32	820	30	761	1109	504	65
250	F	CD2A0250**A6XXLD	58	1473	32	820	30	761	1265	575	65

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE: *15 - 250 kVA* *2 x FCAN, 2 x FCBN* *4 x 2.5%*

STANDARD VOLTAGE
**(VK) 600 - 240/120 **(RK) 480 - 240/120

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

GENERAL PURPOSE TRANSFORMERS

Single-phase - Aluminum winding**- CD2A** Series

Aluminum Series CD2A, Single-phase, Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD2A0015**B6XXLD	33	838	21	533	16	406	216	98	50
25	W/F	CD2A0025**B6XXLD	33	838	21	533	16	406	267	121	50
37.5	W/F	CD2A0037**B6XXLD	33	838	21	533	16	406	337	153	50
50	F	CD2A0050**B6XXLD	47	1194	24	610	23	584	472	214	50
75	F	CD2A0075**B6XXLD	47	1194	24	640	23	584	613	278	55
100	F	CD2A0100**B6XXLD	51	1295	28	711	27	656	813	369	55
150	F	CD2A0150**B6XXLD	58	1473	32	813	30	762	1038	471	60
200	F	CD2A0200**B6XXLD	58	1473	32	813	30	762	1195	542	65
250	F	CD2A0250**B6XXLD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE : *15 - 250 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VK) 600 - 240/120 **(RK) 480- 240/120

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

GENERAL PURPOSE TRANSFORMERS

Three-phase - Aluminum winding **- CD6A** Series

Aluminum Series CD6A, Three-phase, Type 3R, Primary 600 V or 480 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6A0015**A6XXBD	26	660	18	464	15	375	207	94	45
30	W/F	CD6A0030**A6XXBD	31	775	23	578	18	451	335	152	45
45	W/F	CD6A0045**A6XXBD	31	775	23	578	18	451	381	173	45
50	W/F	CD6A0050**A6XXBD	31	775	23	578	18	451	396	180	45
75	W/F	CD6A0075**A6XXBD	37	940	28	705	22	552	596	270	50
112.5	F	CD6A0112**A6XXBD	37	940	28	705	22	552	734	333	50
150	F	CD6A0150**A6XXBD	46	1168	31	787	24	616	1092	495	50
225	F	CD6A0225**A6XXBD	53	1346	37	927	29	724	1635	742	55
300	F	CD6A0300**A6XXBD	53	1346	37	927	29	724	2176	987	55
450	F	CD6A0450**A6XXBD	Consult our Customer Service								
500	F	CD6A0500**A6XXBD	Consult our Customer Service								
600	F	CD6A0600**A6XXBD	Consult our Customer Service								
750	F	CD6A0750**A6XXBD	Consult our Customer Service								
1000	F	CD6A1000**A6XXBD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *15 - 1000 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

GENERAL PURPOSE TRANSFORMERS

Three-phase - Aluminum winding **- CD6A** Series

Aluminum Series CD6A, Three-phase, Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6A0015**B6XXBD	26	660	18	464	15	375	229	104	45
30	W/F	CD6A0030**B6XXBD	31	775	23	578	18	451	335	152	45
45	W/F	CD6A0045**B6XXBD	31	775	23	578	18	451	427	194	45
50	W/F	CD6A0050**B6XXBD	37	940	28	705	22	552	575	261	45
75	F	CD6A0075**B6XXBD	37	940	28	705	22	552	721	327	50
112.5	F	CD6A0112**B6XXBD	46	1168	31	787	24	616	923	419	50
150	F	CD6A0150**B6XXBD	46	1168	31	787	24	616	1128	512	50
225	F	CD6A0225**B6XXBD	53	1346	37	927	29	724	1186	855	55
300	F	CD6A0300**B6XXBD	Consult our Customer Service								
450	F	CD6A0450**B6XXBD	Consult our Customer Service								
500	F	CD6A0500**B6XXBD	Consult our Customer Service								
600	F	CD6A0600**B6XXBD	Consult our Customer Service								
750	F	CD6A0750**B6XXBD	Consult our Customer Service								
1000	F	CD6A1000**B6XXBD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 15 - 1000 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

GENERAL PURPOSE TRANSFORMERS

Three-phase - Aluminum winding **- CD6A** Series

Aluminum Series CD6A, Three-phase, Type 3R, Primary 600 V or 480 V, 80° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6A0015**C6XXBD	Consult our Customer Service								
30	W/F	CD6A0030**C6XXBD	31	775	23	578	18	451	381	173	45
45	W/F	CD6A0045**C6XXBD	37	940	28	705	22	552	596	270	45
50	W/F	CD6A0050**C6XXBD	37	940	28	705	22	552	596	270	45
75	F	CD6A0075**C6XXBD	37	940	28	705	22	552	734	333	50
112.5	F	CD6A0112**C6XXBD	46	1168	31	787	24	616	1128	512	50
150	F	CD6A0150**C6XXBD	53	1346	37	927	29	724	1635	742	50
225	F	CD6A0225**C6XXBD	Consult our Customer Service								
300	F	CD6A0300**C6XXBD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

CATC & CATA Series

The Economical Solution

The Auto-transformer is a transformer with a common primary and secondary winding. Therefore, the secondary winding of auto-transformers is not electrically isolated from the primary. They are usually lighter and less bulky than their isolated counterpart (particularly if the transformation ratio is less than 2:1), and they are therefore, less costly.

CAD Computer-aided Design

- Copper winding
- Aluminum winding
- Compact design
- High efficiency
- Enclosure 3R, 4 and sprinkler proof

Features :

- 600 V - 480 V 10 to 1000 KVA
- 600 V - 240 V 10 to 1000 KVA
- 3 coils, three-phases
- Insulation class 220
- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- High-quality steel laminations
- Compact enclosure
- Silent operation

Options and Accessories :

- Special paint (other than ASA61 grey)
- 115°C and 80°C temperature rise
- Operating frequencies other than 60 Hz
- Special voltage (for domestic or export applications)
- Type 3R, 4 and sprinkler proof enclosure
- Quality assurance program to ISO available upon request

AUTO-TRANSFORMERS

Three-phase - Copper winding - CATC Series

Copper Series CATC, Three-phase, Type 3R, Primary 600Y, Secondary 480Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010VRA6XXCD	25	635	21	533	13	330	134	61	45
15	W/F	CATC0015VRA6XXCD	25	635	21	533	13	330	137	62	45
30	W/F	CATC0030VRA6XXCD	25	635	21	533	13	330	157	71	45
45	W/F	CATC0045VRA6XXCD	25	635	21	533	13	305	179	81	45
75	W/F	CATC0075VRA6XXCD	30	762	25	635	14	356	231	105	50
112.5	W/F	CATC0112VRA6XXCD	30	762	25	635	14	356	280	127	50
150	F	CATC0150VRA6XXCD	30	762	25	635	14	356	317	144	50
225	F	CATC0225VRA6XXCD	33	838	29	737	16	406	364	165	55
300	F	CATC0300VRA6XXCD	33	838	29	737	16	406	511	232	55
450	F	CATC0450VRA6XXCD	47	1194	33	838	18	457	875	397	60
500	F	CATC0500VRA6XXCD	47	1194	33	838	18	457	917	416	60
600	F	CATC0600VRA6XXCD	51	1295	40	1016	22	559	1033	469	62
750	F	CATC0750VRA6XXCD	61	1549	40	1016	22	559	1446	656	64
1000	F	CATC1000VRA6XXCD	68	1727	56	1422	33	838	1809	821	64

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 1000 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase - Copper winding - CATC Series

Copper Series CATC, Three-phase, Type 3R, Primary 600Y, Secondary 416Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010VOA6XXCD	Consult our Customer Service								
15	W/F	CATC0015VOA6XXCD	Consult our Customer Service								
30	W/F	CATC0030V0A6XXCD	Consult our Customer Service								
45	W/F	CATC0045VOA6XXCD	Consult our Customer Service								
75	W/F	CATC0075VOA6XXCD	Consult our Customer Service								
112.5	W/F	CATC0112VOA6XXCD	Consult our Customer Service								
150	W/F	CATC0150VOA6XXCD	Consult our Customer Service								
225	F	CATC0225VOA6XXCD	Consult our Customer Service								
300	F	CATC0300VOA6XXCD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper Series CATC, Three-phase, Type 3R, Primary 600Y, Secondary 380Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010VNA6XXCD	25	635	21	533	13	330	139	63	45
15	W/F	CATC0015VNA6XXCD	25	635	21	533	13	330	143	65	45
30	W/F	CATC0030VNA6XXCD	25	635	21	533	13	330	181	82	45
45	W/F	CATC0045VNA6XXCD	30	762	25	635	14	356	236	107	45
75	W/F	CATC0075VNA6XXCD	30	762	25	635	14	356	287	130	50
112.5	W/F	CATC0112VNA6XXCD	33	838	29	737	16	406	399	181	50
150	W/F	CATC0150VNA6XXCD	33	838	29	737	16	406	494	224	50
225	F	CATC0225VNA6XXCD	47	1194	33	838	18	457	701	318	55
300	F	CATC0300VNA6XXCD	47	1194	33	838	18	457	734	333	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase - Copper winding - **CATC** Series

Copper Series CATC, Three-phase, Type 3R, Primary 600Y, Secondary 240Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010VKA6XXCD	25	635	21	533	13	330	143	65	45
15	W/F	CATC0015VKA6XXCD	25	635	21	533	13	330	150	68	45
30	W/F	CATC0030VKA6XXCD	30	762	25	635	14	356	234	106	45
45	W/F	CATC0045VKA6XXCD	30	762	25	635	14	356	280	127	45
75	W/F	CATC0075VKA6XXCD	33	838	29	737	16	406	364	165	50
112.5	W/F	CATC0112VKA6XXCD	33	838	29	737	16	406	503	228	50
150	F	CATC0150VKA6XXCD	47	1194	33	838	18	457	705	320	50
225	F	CATC0225VKA6XXCD	47	1194	33	838	18	457	855	388	55
300	F	CATC0300VKA6XXCD	51	1295	40	1016	22	559	1296	588	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper Series CATC, Three-phase, Type 3R, Primary 600Y, Secondary 208Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010VHA6XXCD	Consult our Customer Service								
15	W/F	CATC0015VHA6XXCD	Consult our Customer Service								
30	W/F	CATC0030VHA6XXCD	30	762	25	635	14	356	252	114	45
45	W/F	CATC0045VHA6XXCD	30	762	25	635	14	356	292	132	45
75	W/F	CATC0075VHA6XXCD	33	838	29	737	16	406	410	186	50
112.5	W/F	CATC0112VHA6XXCD	Consult our Customer Service								
150	F	CATC0150VHA6XXCD	Consult our Customer Service								
225	F	CATC0225VHA6XXCD	Consult our Customer Service								
300	F	CATC0300VHA6XXCD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase - Copper winding - **CATC** Series

Copper Series CATC, Three-phase, Type 3R, Primary 480Y, Secondary 240Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010RKA6XXCD	Consult our Customer Service								
15	W/F	CATC0015RKA6XXCD	Consult our Customer Service								
30	W/F	CATC0030RKA6XXCD	Consult our Customer Service								
45	W/F	CATC0045RKA6XXCD	Consult our Customer Service								
75	W/F	CATC0075RKA6XXCD	Consult our Customer Service								
112.5	W/F	CATC0112RKA6XXCD	Consult our Customer Service								
150	W/F	CATC0150RKA6XXCD	Consult our Customer Service								
225	F	CATC0225RKA6XXCD	Consult our Customer Service								
300	F	CATC0300RKA6XXCD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper Series CATC, Three-phase, Type 3R, Primary 480Y, Secondary 208Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010RHA6XXCD	Consult our Customer Service								
15	W/F	CATC0015RHA6XXCD	Consult our Customer Service								
30	W/F	CATC0030RHA6XXCD	Consult our Customer Service								
45	W/F	CATC0045RHA6XXCD	Consult our Customer Service								
75	W/F	CATC0075RHA6XXCD	Consult our Customer Service								
112.5	W/F	CATC0112RHA6XXCD	Consult our Customer Service								
150	W/F	CATC0150RHA6XXCD	Consult our Customer Service								
225	F	CATC0225RHA6XXCD	Consult our Customer Service								
300	F	CATC0300RHA6XXCD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase - Copper winding - **CATC** Series

Copper Series CATC, Three-phase, Type 3R, Primary 230Y, Secondary 208Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
10	W/F	CATC0010JHA6XXCD	Consult our Customer Service								
15	W/F	CATC0015JHA6XXCD	Consult our Customer Service								
30	W/F	CATC0030JHA6XXCD	Consult our Customer Service								
45	W/F	CATC0045JHA6XXCD	Consult our Customer Service								
75	W/F	CATC0075JHA6XXCD	Consult our Customer Service								
112.5	W/F	CATC0112JHA6XXCD	Consult our Customer Service								
150	W/F	CATC0150JHA6XXCD	Consult our Customer Service								
225	W/F	CATC0225JHA6XXCD	Consult our Customer Service								
300	F	CATC0300JHA6XXCD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 10 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase Aluminum winding CATA Series

ALUMINUM Serie CATA, Three-phase, Type 3R, Primary 600Y, Secondary 480Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	In	kg	dB
30	W/F	CATA0030VRA6XXCD	25	635	21	533	13	330	146	66	45
45	W/F	CATA0045VRA6XXCD	25	635	21	533	13	330	156	71	45
75	W/F	CATA0075VRA6XXCD	30	762	25	635	14	356	213	97	50
112.5	W/F	CATA0112VRA6XXCD	30	762	25	635	14	356	253	115	50
150	W/F	CATA0150VRA6XXCD	Consult our Customer Service								
225	W/F	CATA0225VRA6XXCD	33	838	29	737	16	406	369	167	55
300	W/F	CATA0300VRA6XXCD	47	1194	33	838	18	457	543	246	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: 30 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For all electrical schematic diagrams see Section 7, page 20

ALUMINUM Serie CATA, Three-phase, Type 3R, Primary 600Y, Secondary 380Y , 150° C

kVA	Mounting	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
30	W/F	CATA0030VNA6XXCD	25	635	21	533	13	330	167	76	45
45	W/F	CATA0045VNA6XXCD	30	762	25	635	14	356	217	98	45
75	W/F	CATA0075VNA6XXCD	30	762	25	635	14	356	269	122	50
112.5	W/F	CATA0112VNA6XXCD	33	838	29	635	16	406	357	162	50
150	W/F	CATA0150VNA6XXCD	33	838	29	737	16	406	447	203	50
225	F	CATA0225VNA6XXCD	Consult our Customer Service								
300	F	CATA0300VNA6XXCD	Consult our Customer Service								

((1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: 30 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For all electrical schematic diagrams see Section 7, page 20

AUTO-TRANSFORMERS

Three-phase Aluminum winding CATA Series

ALUMINUM Serie CATA, Three-phase, Type 3R, Primary 600Y, Secondary 240Y , 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
30	W/F	CATA0030VKA6XXCD	30	762	25	635	14	356	226	103	45
45	W/F	CATA0045VKA6XXCD	30	762	25	635	14	356	272	123	45
75	W/F	CATA0075VKA6XXCD	33	838	29	635	16	406	371	168	50
112.5	W/F	CATA0112VKA6XXCD	33	838	29	737	16	406	471	214	50
150	F	CATA0150VKA6XXCD	Consult our Customer Service								
225	F	CATA0225VKA6XXCD	51	1295	40	1016	22	559	829	376	55
300	F	CATA0300VKA6XXCD	51	1295	40	1016	22	559	977	443	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 30 - 300 kVA 1 x FCAN, 1 x FCBN 2 X 4.5%

All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

COMMERCIAL - C802-SERIES

Copper or **Aluminum**

GUIDE SPECIFICATION STANDARD FORMAT

PART 1 - GENERAL

1.1 SECTIONS

A. This section includes Dry-Type Distribution Transformers.

1.2 REFERENCES

A. CSA C22.2 N° 47

B. The most recent NRCAN

1.3 SUBMITTALS

A. Products Data: Include data on features, components, ratings and performance for each type of transformer specified. Include dimensioned plans, sections, elevation and side views.

B. Wiring diagrams will identify, detail wiring and terminals for tap changing and connecting field-installed wiring.

1.4 STANDARDS

A. Listing and Labeling: Transformers specified in the section are certified by NRCAN.

B. Transformers shall meet relevant NRCAN standards.

1.5 DELIVERY, STORAGE AND HANDLING

A. Section 01600, Material and equipment will address, transport, handling, storage and protection of products.

B. Deliver transformers individually wrapped for protection.

C. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or plastic cover to protect units from dirt, water, construction debris and traffic.

D. Do not stack transformers.

E. Temporary Heating: If transformer cannot be stored in a space that is continously under normal control of temperature and humidity, apply temporary heat according to manufacturer's written instructions until evidence of condensation is no longer visible.

1.6 WARRANTY

A. Provide a 12 month warranty against defects in materials and workmanship.

COMMERCIAL - SERIES 2 & 6

Copper or **Aluminum**

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer : Delta Transformers.

B. Alternative manufacturer and product are subject to full compliance with this specification and must be approved by engineer at least 10 days prior to bid closing.

C. The transformers must be a standard item in manufacturer's published catalog. A custom product, one that requires design and/or packaging modifications to meet this specification, is not acceptable.

D. All transformers in the project must be provided by the same manufacturer.

2.2 CONSTRUCTION THREE-PHASE AND SINGLE-PHASE TRANSFORMERS

A. Transformer shall be [15, 30, 45, 75, 112,5, 150, 225, 30 & 450] kVA, three-phase, 3 coils or [25, 37,5, 50, 75, 100, 150, 200 & 250] kVA, single-phase, 2 coils with a common core constructions, 60 Hz.

B. Primary winding shall be 600 volts, three-phase, delta connected, 480 or 600 volts, single-phase, complete with 4 full capacity 2,5% adjustment taps, 2 below (FCBN) and 2 above (FCAN) the rated voltage.

C. Secondary winding shall be 208Y/120 volts, three-phases, wye connected, with a 30° angular displacement (lagging) with respect to the primary winding or 120/240 volts, single-phase.

D. All winding conductors shall be of copper or aluminum.

E. Temperature rise at full load shall not exceed 150°C, with a class 220 insulation system.

F. Transformers to qualify to High Efficiency Values for dry-type transformers per the most recent NRCAN.

G. Standard impedance at 60 Hz.

H. Standard audible sound level.

I. Windings shall be wound with the secondary winding nearest to the core.

J. The core shall be constructed of high grade, silicon steel laminations.

K. The impregnation process for the core-and-coil assembly shall include a period under vacuum, followed by pressure impregnation using epoxy resin (V.P.I. Process) for 220 isolation class.

L. The transformer shall be isolated from the enclosure to reduce noise and vibration by means of anti-vibration pads.

M. The transformer enclosure shall be fabricated from sheet steel and shall be of Type 3R (three-phase) or Type 3R (single-phase).

N. The enclosure coating shall be grey ASA 61.

COMMERCIAL - SERIES 2 & 6

Aluminum - DA2 and DA6 Series, **Copper DC2 and DC6**

Delta Transformers Inc. presents the Commercial Series of Distribution Transformers. Building on our years of experience in engineering and designing of transformers we have created a product that is guaranteed to provide high efficiency in an economical package.

These units are designed to the latest Industry Standards and are NRCAN Certified. Transformers need to qualify to High Efficiency Values for Dry-Type Transformers as per NRCAN. These attributes coupled with its efficiency in design make this product attractive to stock and economically placed to meet your budget. The transformers are manufactured in a state of the art facility by associates who are committed to quality and first class workmanship.

The warranty provided with these products offers our guarantee against defects and workmanship for up to 12 months after receipt of the product.

Features

- The available transformer sizes are:
  - Single-phase: 25, 37, 5, 50, 75, 100, 150, 200 & 250kVA.
  - Three-phase: 15, 30, 45, 75, 112,5, 150, 225, 300 & 450 kVA.
- The primary windings shall be 480 or 600 volts, three-phase, delta connected or 480 or 600 volts, single-phase, c/w four full capacity 2.5% adjustment taps, 2 below (FCBN) and 2 above (FCAN) the rated voltage.
- Secondary winding shall be 208Y/120 volts (three-phase), wye connected, with an angular 30˚ displacement, lagging with respect to the primary winding or 120/240 volts, single-phase.
- All winding conductors are of copper or aluminum.
- Temperature rise at full load shall not exceed 150˚C , with class 220 insulation system.
- High efficiency as per the most recent NRCAN.
- Standard impedance at 60 Hz.
- Standard audible sound level.
- Windings are wound with secondary nearest to the core.
- The core is made of high grade silicon steel laminations.
- The impregnation process for the core and coil assembly includes a period under vacuum, followed by pressure impregnation using polyester resin (VPI Process), for 220 isolation class.
- The core and coils are isolated from the enclosure by anti-vibration pads.
- The transformers enclosure is fabricated from sheet metal and comes complete with 3R construction making it suitable for sprinklered environments.
- The coating of the enclosure is ASA 61.

COMMERCIAL

Single-phase - Aluminum winding - DA2 Series

Aluminum Series DA2, Type 3R Single-phase, Primary 600 V, Secondary 120 / 240V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DA2015V	24	600	22	561	18	457	160	73	Fig 2	WD1
25	*W/F	DA2025V	26	650	25	632	19	483	225	102	Fig 3	WD1
37.5	F	DA2037V	31	790	26	668	23	584	310	141	Fig 4	WD1
50	F	DA2050V	31	790	26	668	23	584	370	168	Fig 4	WD1
75	F	DA2075V	39	993	29	737	27	686	450	205	Fig 5	WD1
100	F	DA2100V	39	993	29	737	27	686	560	255	Fig 5	WD1
150	F	DA2150V	48	1219	38	960	30	762	820	373	Fig 6	WD2
200	F	DA2200V	48	1219	38	960	30	762	1000	455	Fig 6	WD2
250	F	DA2250V	56	1425	42	1062	36	914	1300	591	Fig 7	WD2

(1) W = Wall mount F = Floor mount
(2) Catalog number
SINGLE-PHASE : 15 - 200 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3 enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

Aluminum Series DA2, Type 3R Single-phase, Primary 480 V, Secondary 120 / 240V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DA2015R	24	600	22	561	18	457	160	73	Fig 2	WD1
25	*W/F	DA2025R	26	650	25	632	19	483	225	102	Fig 3	WD1
37.5	F	DA2037R	31	790	26	668	23	584	310	141	Fig 4	WD1
50	F	DA2050R	31	790	26	668	23	584	370	168	Fig 4	WD1
75	F	DA2075R	39	993	29	737	27	686	450	205	Fig 5	WD1
100	F	DA2100R	39	993	29	737	27	686	560	255	Fig 6	WD1
150	F	DA2150R	48	1219	38	960	30	762	820	373	Fig 6	WD2
200	F	DA2200R	48	1219	38	960	30	762	1000	455	Fig 6	WD2

(1) W = Wall mount F = Floor mount
(2) Catalog number
SINGLE-PHASE : 15 - 200 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3 enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

COMMERCIAL

Three-phase - Aluminum winding - DA6 Series

Aluminum Series DA6, Type 3R Three-phase, Primary 600 V, Secondary 208Y /120 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DA6015V	18	447	20	511	18	457	165	75	Fig 1	WD3
30	*W/F	DA6030V	24	600	22	561	18	457	285	130	Fig 2	WD3
45	*W/F	DA6045V	26	650	25	635	19	483	345	157	Fig 3	WD3
75	F	DA6075V	31	993	26	668	23	584	540	245	Fig 4	WD3
112.5	F	DA6112V	39	993	29	737	27	686	750	341	Fig 5	WD3
150	F	DA6150V	39	993	29	737	27	686	885	403	Fig 5	WD3
225	F	DA6225V	49	1229	38	960	30	762	1500	682	Fig 6	WD3
300	F	DA6300V	49	1229	38	960	30	762	1750	795	Fig 6	WD3
450	F	DA6450V	56	1422	42	1067	36	914	2400	1091	Fig 7	WD4

(1) W = Wall mount F = Floor mount
(2) Catalog number
THREE-PHASE : 15 - 450 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3R enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

Aluminum Series DA6, Three-phase, Primary 480V, Secondary 208Y / 120 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DA6015R	18	447	20	511	18	457	165	75	Fig 1	WD3
30	*W/F	DA6030R	24	600	22	561	18	457	285	130	Fig 2	WD3
45	*W/F	DA6045R	26	650	25	635	19	483	345	157	Fig 3	WD3
75	F	DA6075R	31	790	26	668	23	584	540	245	Fig 4	WD3
112.5	F	DA6112R	39	993	29	737	27	686	750	341	Fig 5	WD3
150	F	DA6150R	39	993	29	737	27	686	885	403	Fig 5	WD3
225	F	DA6225R	49	1229	38	960	30	762	1500	682	Fig 6	WD3
300	F	DA6300R	49	1229	38	960	30	762	1750	795	Fig 6	WD3

(1) W = Wall mount F = Floor mount
(2) Catalog number
THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3R enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

COMMERCIAL

Single-phase - Copper winding - DC2 Series

Copper Series DC2, Type 3R Single-phase, Primary 600 V, Secondary 120 / 240V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DC2015V	24	600	22	561	18	457	165	75	Fig 2	WD1
25	*W/F	DC2025V	26	650	25	632	19	483	240	109	Fig 3	WD1
37.5	F	DC2037V	31	790	26	668	23	584	340	155	Fig 4	WD1
50	F	DC2050V	31	790	26	668	23	584	390	177	Fig 4	WD1
75	F	DC2075V	39	993	29	737	27	686	540	245	Fig 5	WD1
100	F	DC2100V	39	993	29	737	27	686	650	295	Fig 5	WD1
150	F	DC2150V	48	1219	38	960	30	762	960	436	Fig 6	WD2
200	F	DC2200V	48	1219	38	960	30	762	1080	491	Fig 6	WD2
250	F	DC2250V	56	1425	42	1062	36	914	1440	655	Fig 7	WD2

(1) W = Wall mount F = Floor mount
(2) Catalog number
SINGLE-PHASE: 15 - 200 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3 enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

Copper Series DC2, Type 3R Single-phase, Primary 480 V, Secondary 120 / 240V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DC2015R	24	600	22	561	18	457	165	75	Fig 2	WD1
25	*W/F	DC2025R	26	650	25	632	19	483	240	109	Fig 3	WD1
37.5	F	DC2037R	31	790	26	668	23	584	340	155	Fig 4	WD1
50	F	DC2050R	31	790	26	668	23	584	390	177	Fig 4	WD1
75	F	DC2075R	39	993	29	737	27	686	540	245	Fig 5	WD1
100	F	DC2100R	39	993	39	737	27	686	650	295	Fig 5	WD1
150	F	DC2150R	48	1219	38	960	30	762	960	436	Fig 6	WD2
200	F	DC2200R	48	1219	38	960	30	762	1080	491	Fig 6	WD2

(1) W = Wall mount F = Floor mount
(2) Catalog number
SINGLE-PHASE: 15 - 200 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3 enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

COMMERCIAL

Three-phase - Coper winding - DC6 Series

Copper Series DC6, Type 3R Three-phase, Primary 600 V, Secondary 208Y /120 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DC6015V	18	447	20	508	18	457	185	84	Fig 1	WD3
30	*W/F	DC6030V	24	600	22	559	18	457	300	136	Fig 2	WD3
45	*W/F	DC6045V	26	650	25	635	19	483	390	177	Fig 3	WD3
75	F	DC6075V	31	787	26	660	23	584	635	289	Fig 4	WD3
112.5	F	DC6112V	39	991	29	737	27	686	815	370	Fig 5	WD3
150	F	DC6150V	39	991	29	737	27	686	980	445	Fig 5	WD3
225	F	DC6225V	48	1219	38	952	30	762	1600	727	Fig 6	WD3
300	F	DC6300V	48	1219	38	952	30	762	1850	841	Fig 6	WD3
450	F	DC6450V	56	1422	42	1067	36	914	3000	1364	Fig 7	WD4

(1) W = Wall mount F = Floor mount
(2) Catalog number
THREE-PHASE : 15 - 450 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3R enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

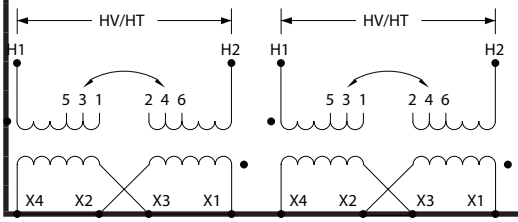
Copper Series DC6, Three-phase, Primary 480V, Secondary 208Y / 120 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Enclosure	Wiring diagram
			Height		Width		Depth					
			In	mm	In	mm	In	mm	lb	kg		
15	*W/F	DC6015R	18	447	20	508	18	457	185	84	Fig 1	WD3
30	*W/F	DC6030R	24	600	22	559	18	457	300	136	Fig 2	WD3
45	*W/F	DC6045R	26	650	25	635	19	483	390	177	Fig 3	WD3
75	F	DC6075R	31	787	26	660	23	584	635	289	Fig 4	WD3
112.5	F	DC6112R	39	991	29	737	27	686	815	370	Fig 5	WD3
150	F	DC6150R	39	991	29	737	27	686	980	445	Fig 5	WD3
225	F	DC6225R	48	1219	38	952	30	762	1600	727	Fig 6	WD3
300	F	DC6300R	48	1219	38	952	30	762	1850	841	Fig 6	WD3

(1) W = Wall mount F = Floor mount
(2) Catalog number
THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) The dimensions are applicable for Type 3R enclosure only
All weights and dimensions are approximate and subject to change without notice.
**Wall mount brackets are optional*

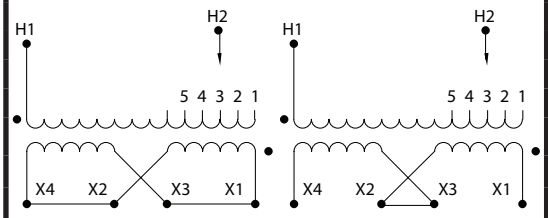
WIRING DIAGRAM

WD1 Wiring Diagram



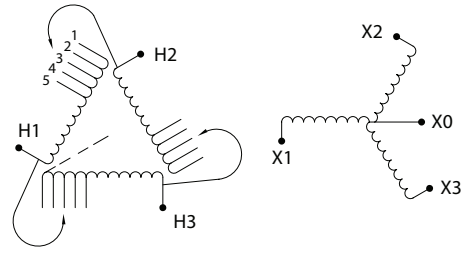
% Voltage	Primary Volts	Connect lines to	Inter-connect
105.0%	504 630	H1, H2	1-2
102.5%	**492 615**	H1, H2	**2-3**
100.0%	**480 600**	**H1, H2**	**3-4**
97.5%	**468 585**	H1, H2	**4-5**
95.0%	**456 570**	H1, H2	**5-6**
	Secondary Volts	**Connect lines to**	**Inter-connect**
	240	**X1, X4**	**X2-X3**
	120	**X1 & X3, X2 & X4**	**X2-X4, X1-X3**
	120/240	**X1, X2, X4**	**X2-X3**

WD2 Wiring Diagram



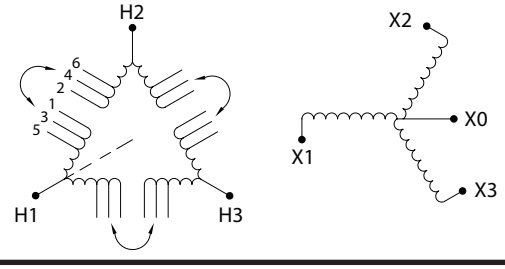
% Voltage	Primary Volts	Connect lines to	Inter-connect
105.0%	504 630	H1, H2	1
102.5%	**492 615**	H1, H2	**2**
100.0%	**480 600**	**H1, H2**	**3**
97.5%	**468 585**	H1, H2	**4**
95.0%	**456 570**	H1, H2	**5**
	Secondary Volts	**Connect lines to**	**Inter-connect**
	240	**X1, X4**	**X2-X3**
	120	**X1 & X3, X2 & X4**	**X2-X4, X1-X3**
	120/240	**X1, X2, X4**	**X2-X3**

WD3 Wiring Diagram



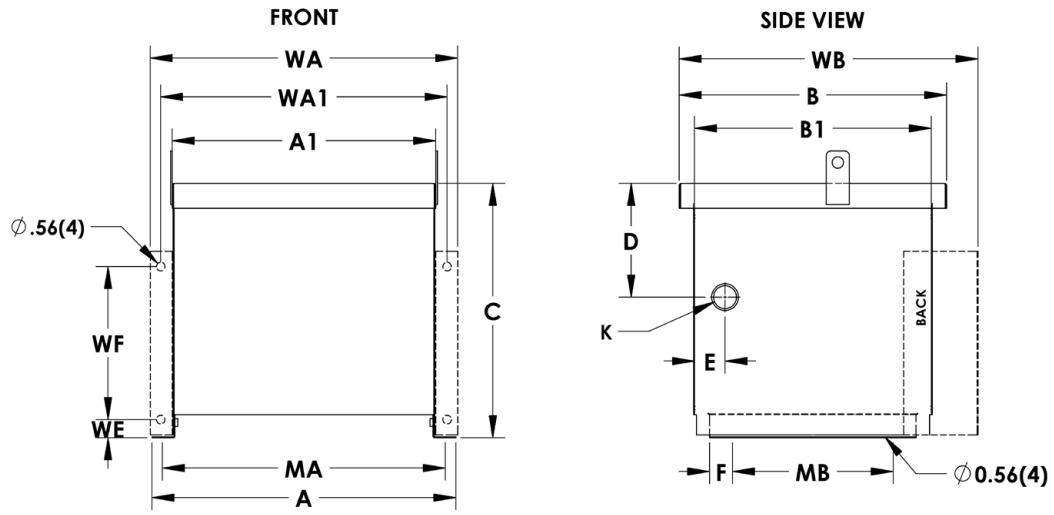
% Voltage	Primary Volts	Connect lines to	Inter-connect
105.0%	504 630	H1, H2, H3	1
102.5%	**492 615**	H1, H2, H3	**2**
100.0%	**480 600**	**H1, H2, H3**	**3**
97.5%	**468 585**	H1, H2, H3	**4**
95.0%	**456 570**	H1, H2, H3	**5**
	Secondary Volts	**Connect lines to**	
	208	**X1, X2, X3**	
	120	**X1,X0 X2,X0 X3,X0**	

WD4 Wiring Diagram



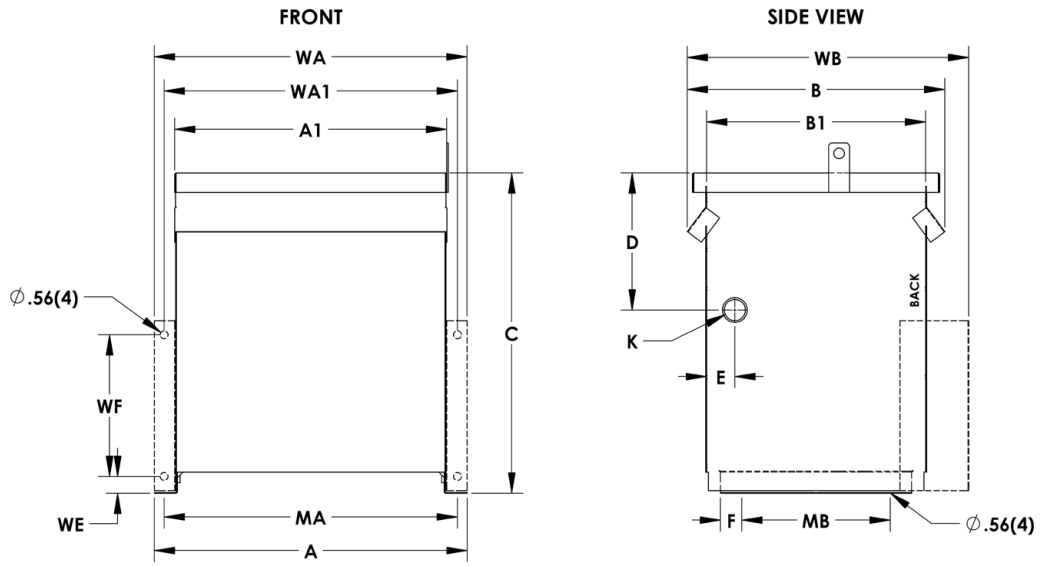
% Voltage	Primary Volts	Connect lines to	Inter-connect
105.0%	630	H1, H2, H3	1-2
102.5%	**613**	H1, H2, H3	**2-3**
100.0%	**600**	**H1, H2, H3**	**3-4**
97.5%	**585**	H1, H2, H3	**4-5**
95.0%	**570**	H1, H2, H3	**5-6**
	Secondary Volts	**Connect lines to**	
	208	**X1, X2, X3**	
	120	**X1,X0 X2,X0 X3,X0**	

ENCLOSURE FIGURES



Enclosure	Dimensions in Inches															
	A	A1	B	B1	C	D	E	F	K	MA	MB	WA*	WA1*	WB*	WE*	WF*
FIG1	19.9	17.3	17.5	15.5	17.6	7.4	2.0	1.5	1.75 K.O.	18.5	10.5	20.1	18.7	19.5	2.2	10.0

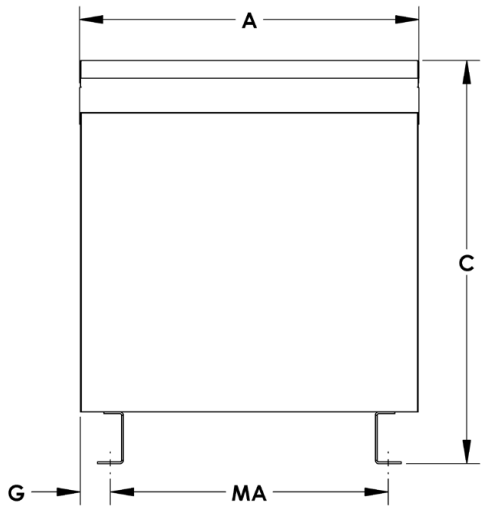
* Dimensions of enclosure when wall-mounting bracket installed (optional accessory component).



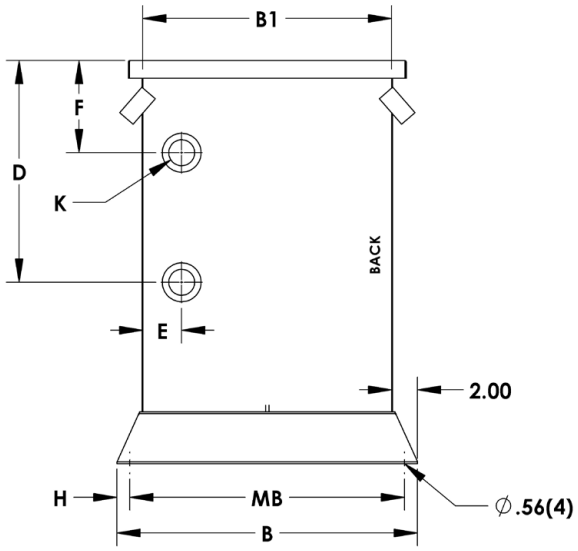
Enclosure	Dimensions in Inches															
	A	A1	B	B1	C	D	E	F	K	MA	MB	WA*	WA1*	WB*	WE*	WF*
FIG2	22.1	19.2	18.2	15.5	23.6	9.7	2.0	1.5	1.75 K.O.	20.8	10.5	22.1	20.8	19.9	2.2	10.0
FIG3	24.9	22.0	19.4	16.5	25.6	12.0	2.0	2.0	1.75 K.O.	23.5	10.5	24.9	23.5	21.0	2.2	10.0

* Dimensions of enclosure when wall-mounting bracket installed (optional accessory component).

ENCLOSURE FIGURES

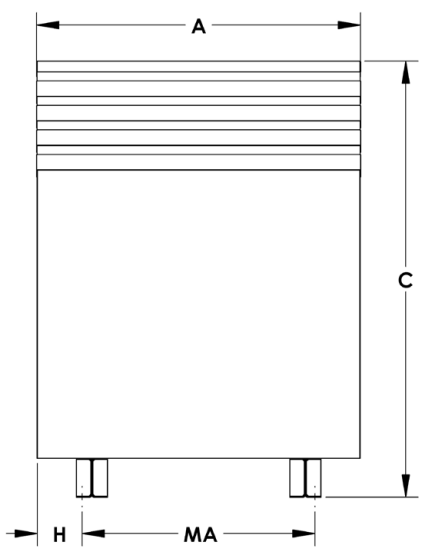


FRONT

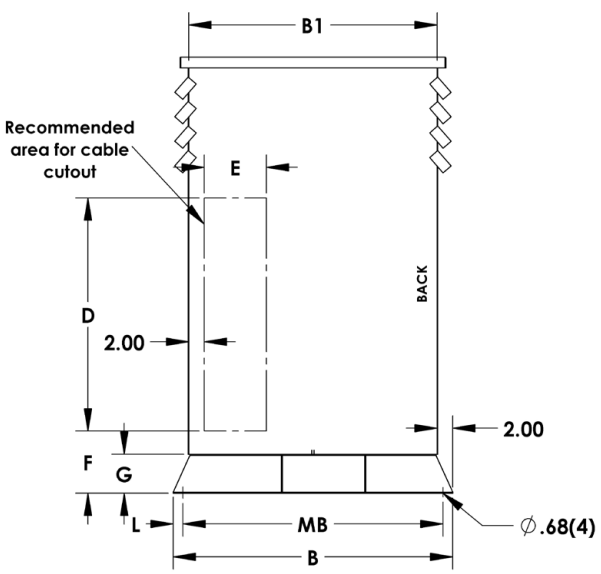


SIDE VIEW

Enclosure	Dimensions in Inches											
	A	B	B1	C	D	E	F	G	H	K	MA	MB
FIG4	26.3	23.3	19.3	31.1	17.1	3.0	7.1	2.3	1.0	2.0 x 3.0 K.O.	21.5	21.3
FIG5	29.0	26.5	22.5	39.1	24.1	3.0	14.1	2.7	1.0	2.0 x 3.0 K.O.	23.5	24.5
FIG6	37.8	30.0	26.0	48.4	33.4	3.0	23.4	6.8	1.0	2.0 x 3.0 K.O.	24.0	28.0



FRONT



SIDE VIEW

Enclosure	Dimensions in Inches											
	A	B	B1	C	D	E	F	G	H	K	MA	MB
FIG7	41.8	36.0	32.0	56.1	30.0	8.0	8.0	5.0	5.9	0.8	30.0	34.5

ENVIRO-GUARD

Copper - CD6C Series

A complete and versatile transformer line that meets harsh environment requirements, stringent industrial standards and eases your installation.

ENVIRO – GUARD®

Optimized epoxy vacuum impregnation for harsh environment.

- Maximize sealing of windings and conductor leads
- Improved resistance to shrinking and cracking during lifetime operation
- Provides hydrolytic stability under electrical stress, environmental contamination or abrupt temperature variation

FEATURES

- High Efficiency compliant per the most recent CSA C802-2 & NRCAN 2018.
- UL-1446 recognized class 220 insulation systems
- Superior thermal endurance
- UL mil-spec qualified fungus resistance
- Chemical resistance: H2S, H2S + salt and more
- Other data available upon request

APPLICATION

- Next generation of epoxy-potted transformer for needs beyond 75 kVA applications
- Indoor and outdoor applications: mining, petrochemical, pulp & paper...

BENEFITS

- Enhanced electrical and mechanical protection
- Lighter unit
- Lower transportation cost
- Ease of manipulation
- Lighter structural support
- Flexibility to any electrical requirements
- Available at any kVA or voltage ratings

CHARACTERISTICS

- Low viscosity resins
- Flexible coating
- Excellent peel strength
- High dielectric withstand
- Excellent noise reduction properties
- Superior heat transfer capabilities

ENVIRO-GUARD SERIES 6

Three-phase - Copper winding - CD6C Series

Copper, Series CD6C, Three-phase Type 3R, Primary 600 V or 480 V, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6C0015 S9230**	26	660	18	464	15	375	214	97	45
30	W/F	CD6C0030 S9230**	31	775	23	578	18	451	341	155	45
45	W/F	CD6C0045 S9230**	31	775	23	578	18	451	407	185	45
50	W/F	CD6C0050 S9230**	31	775	23	578	18	451	441	200	45
75	W/F	CD6C0075 S9230**	37	940	28	705	22	552	674	306	50
112.5	W/F	CD6C0112 S9230**	37	940	28	705	22	552	878	398	50
150	W/F	CD6C0150 S9230**	46	1168	31	787	24	616	1069	485	50
225	F	CD6C0225 S9230**	53	1346	37	927	29	724	1533	695	55
300	F	CD6C0300 S9230**	53	1346	37	927	29	724	1843	836	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(02) 600 - 208Y/120 **(12) 600 - 480Y/277
**(32) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper, Series CD6C, Three-phase Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6C0015 S9232**	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030 S9232**	31	775	23	578	18	451	378	171	45
45	W/F	CD6C0045 S9232**	31	775	23	578	18	451	461	209	45
50	W/F	CD6C0050 S9232**	37	940	28	705	22	552	653	296	4545
75	W/F	CD6C0075 S9232**	37	940	28	705	22	552	779	353	50
112.5	W/F	CD6C0112 S9232**	46	1168	31	787	24	616	985	447	50
150	W/F	CD6C0150 S9232**	46	1168	31	787	24	616	1172	532	50
225	F	CD6C0225 S9232**	53	1346	37	927	29	724	1851	840	55
300	F	CD6C0300 S9232**	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(02) 600 - 208Y/120 **(12) 600 - 480Y/277
**(32) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

ENVIRO-GUARD K13 - SERIES 6

Three-phase - Copper winding - CD6C Series K13

Copper, Series CD6C, Three-phase Type 3R, Primary 600 V or 480 V, 150° C, K13

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6C0015 S9230**	Consult our Customer Service								
30	W/F	CD6C0030 S9230**	Consult our Customer Service								
45	W/F	CD6C0045 S9230**	Consult our Customer Service								
50	W/F	CD6C0050 S9230**	Consult our Customer Service								
75	W/F	CD6C0075 S9230**	Consult our Customer Service								
112.5	W/F	CD6C0112 S9230**	Consult our Customer Service								
150	W/F	CD6C0150 S9230**	Consult our Customer Service								
225	F	CD6C0225 S9230**	Consult our Customer Service								
300	F	CD6C0300 S9230**	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
****(57) 600 - 208Y/120 **(67) 600 - 480Y/277**
****(87) 480 - 208Y/120**

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper, Series CD6C, Three-phase Type 3R, Primary 600 V or 480 V, 115° C, K13

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6C0015 S9232**	Consult our Customer Service								
30	W/F	CD6C0030 S9232**	Consult our Customer Service								
45	W/F	CD6C0045 S9232**	Consult our Customer Service								
50	W/F	CD6C0050 S9232**	Consult our Customer Service								
75	W/F	CD6C0075 S9232**	Consult our Customer Service								
112.5	W/F	CD6C0112 S9232**	Consult our Customer Service								
150	W/F	CD6C0150 S9232**	Consult our Customer Service								
225	F	CD6C0225 S9232**	Consult our Customer Service								
300	F	CD6C0300 S9232**	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
****(57) 600 - 208Y/120 **(67) 600 - 480Y/277**
****(87) 480 - 208Y/120**

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

ENVIRO-GUARD - SERIES 6

Copper - **XD6C** Series

A complete and versatile transformer line that meets harsh environment requirements, stringent industrial standards and eases your installation.

ENVIRO – GUARD®

Optimized epoxy vacuum impregnation for harsh environment.

- Maximize sealing of windings and conductor leads
- Improved resistance to shrinking and cracking during lifetime operation
- Provides hydrolytic stability under electrical stress, environmental contamination or abrupt temperature variation

FEATURES

- High Efficiency compliant per the most recent CSA C802-2 & NRCAN 2018.
- As per UL-1446 per class 220 insulation systems
- Superior thermal endurance
- UL mil-spec qualified fungus resistance
- Chemical resistance: H2S, H2S + salt and more
- Other data available upon request
- **Approved for installation in hazardous locations Class 1, Div 2, Groups A, B, C and D temperature code (T3)**

APPLICATION

- Next generation of epoxy-potted transformer for needs beyond 75 kVA applications
- Indoor and outdoor applications: mining, petrochemical, pulp & paper...

BENEFITS

- Enhanced electrical and mechanical protection
- Lighter unit
- Lower transportation cost
- Ease of manipulation
- Lighter structural support
- Flexibility to any electrical requirements
- Available at any kVA or voltage ratings

CHARACTERISTICS

- Low viscosity resins
- Flexible coating
- Excellent peel strength
- High dielectric withstand
- Excellent noise reduction properties
- Superior heat transfer capabilities

ENVIRO-GUARD

Three-phase - Copper winding - XD6C Series

Approved for Installation in hazardous locations Class 1, Zone 2, Groups A, B, C and D temperature code T3

Copper, Series XD6C (T3), Three-phase Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	XD6C0015 S9232**	26	660	18	464	15	375	267	121	45
30	W/F	XD6C0030 S9232**	31	775	23	578	18	451	378	171	45
45	W/F	XD6C0045 S9232**	31	775	23	578	18	451	461	209	45
50	W/F	XD6C0050 S9232**	37	940	28	705	22	552	653	296	45
75	W/F	XD6C0075 S9232**	37	940	28	705	22	552	779	353	50
112.5	W/F	XD6C0112 S9232**	46	1168	31	787	24	616	985	447	50
150	W/F	XD6C0150 S9232**	46	1168	31	787	24	616	1172	532	50
225	F	XD6C0225 S9232**	53	1346	37	927	29	724	1851	840	55
300	F	XD6C0300 S9232**	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*15 - 300 kVA*	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

STANDARD VOLTAGE
**(02) 600 - 208Y/120 **(12) 600 - 480Y/277
**(32) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

ENVIRO-GUARD - SERIES 6

SPECIFICATION GUIDE

PART 1 - GENERAL

1.1 PRODUCT DATA

A. Read and be governed by Section 16010.
Submit product data in accordance with Section 16010.

1.2 STANDARDS

A. Design, manufacture and test the dry-type transformers in accordance with industry-standard practices and in accordance with the following standards:
- CSA C22.2 No. 47
Air-cooled Transformers
- NRCAN 2018 & the most recent CSA C802-2.
Minimum efficiency values for dry-type transformers.
- CSA C9-02

PART 2 - PRODUCTS

2.1 TRANSFORMERS

A. Transformers shall have the following characteristics.

B. Type : ANN.

C. KVA, primary and secondary voltage as indicated.

D. Single or Three phase, as indicated.

E. Delta connected primary for three-phase transformers.

F. Secondary winding shall be wye connected.

G. 4 full capacity 2,5 %, adjustment taps, 2 below (FCBN) and 2 above (FCAN).

H. Scott « T » connected three-phase windings are not acceptable.

I. Copper windings, 3 coil construction.

J. 220°C insulation class.

K. Transformers to pass continous nominal voltage and induced voltage tests immersed into tap water tank.

L. 115 °C temperature rise (80 °C available upon request).

M. Standard impedance.

N. Sound level : max. 45 dB up to 45 kVA, 50 dB from 75 to 150 kVA and 55 dB from 150 to 300 kVA. Other kVA per applicable standards.

O. Ventilated, 3-R weatherproof enclosure with grey finish.

P. Anti-vibration pads shall be used between the core and the enclosure.

Q. Lifetime warranty at standard voltage applications.

R. The impregnation process for the whole core-and-coil and connecting leads assembly shall meet Enviro-Guard® process consisting of optimized EPOXY Vacuum Pressure Impregnation. Impregnation processes with periods under vacuum, followed by pressure impregnations using epoxy resin part of a class 220 as per UL-1446 Insulation Systems.

S. Transformers shall have nameplate indicating, but not restricted to the following :
- KVA rating
- Voltage rating
- Impedance
- Type
- Insulation Class
- Temperature rise
- Connection diagram
- Serial number

2.2 OPTIONAL FEATURES

A. Transformers suitable for hazardous location Class 1, Div 2, groups A, B, C, D, temperature code T3, per Canadian Electrical Code CSA C22.1-02, at maximun nameplate KVA rating.

B. K-rated as indicated with electrostatic shield.

2.3 MANUFACTURERS

A. All transformers shall be of one manufacturer. Acceptable manufacturers are:
- Enviro-Guard® by Delta Transformers Inc.
- As per UL-1446 class 220 epoxy resin impregnation process.

ENVIRO-GUARD - SERIES 6

SPECIFICATION GUIDE

PART 3 - EXECUTION

3.1 MOUNTING

A. Floor or wall mount the dry-type transformers up to 75 kVA as indicated.

B. Mount transformers 75 kVA and above, on floor.

C. Ensure adequate clearance around transformer for ventilation.

D. Install transformers in level upright position.

E. Remove shipping supports only after transformer is installed and just before putting into service.

F. Loosen isolation pad bolts until no compression is visible.

G. Supply and install anti-vibration dampers for wall or ceiling mounted transformers.

H. Make primary and secondary connections with flexible metal conduits.

I. Energize transformers as soon as possible after installation is completed.

3.2 EQUIPMENT IDENTIFICATION

A. Provide equipment identification nameplates in accordance with section 16104.

MINI-POWER CENTER

Series **CCSC** and **CCTC**

Look further for quality, savings, flexibility and reliability

The DELTA mini power center (CCSC/CCTC) is a small substation housed in a 3R and sprinkler proof enclosure which provides quality, savings and flexibility. It comprises an epoxy-potted transformer with a distribution panel equipped with the necessary circuit breakers for the primary and secondary.

The Delta mini power center is supplied with pre-installed components, including cables, which provides 30% to 40% savings in equipment and installation time. The compact design requires substantially less floor space than the conventional “panel & transformer”.

The CCSC/CCTC Series transformers meet CSA standards and the Electrical Code Service entrance requirements, and may also serve as a temporary indoor or outdoor installation.

The two-component construction enables the dismantling of the transformer without having to move the panel cables.

Quality, Savings, Flexibility and Reliability

The mini power center is designed and constructed according to the same standards as any other Delta product with regard to accuracy, dependability and quality. The transformer is designed by means of specialized software, and manufactured under a strict quality assurance program in order to guarantee optimum service.

Features:

- 5 - 25 KVA single-phase, 9 - 30 KVA three-phase
- 600 V or 480 V primary
- 3R and sprinkler proof enclosure - compact and adapted to outdoor applications
- Epoxy-potted and copper-wound
- Choice of panels from different manufacturers
- Pre-installed and pre-wired primary and secondary circuts
- Removable transformer
- Approved for service entrances

MINI-POWER CENTER

Single-phase and **Three-phase - Copper winding - CCSC** and **CCTC** Series

Not regulated by C802 Standard & NRCAN 2018

Copper Cutler - Hammer, Series CCSC, Single-phase, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Secondary circuits		Circuit Breaker Capacity			Dimensions (3)						Weight		Noise Level
			Disjonc. 120 V	1 In. 240 V	Primary	Second.	Branch Max.	Height In	Height mm	Width In	Width mm	Depth In	Depth mm	lb	kg	dB
5	W	CCSC1A05**B6XXLR	22	11	15	25	20	44	1127	24	610	14	356	262	119	45
10	W	CCSC1A10**B6XXLR	22	11	20	50	40	46	1159	24	610	14	356	331	150	50
15	W	CCSC1A15**B6XXLR	22	11	30	70	60	47	1191	24	610	14	356	377	171	50
25	W	CCSC1A25**B6XXLR	22	11	50	125	100	49	1254	24	610	14	356	528	235	50

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE: 5 - 10 kVA 1 x FCAN, 1 x FCBN 2 x 4.5%
15 - 25 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VK) 600 - 120/240 **(RK) 480 - 120/240

((3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

Copper Cutler - Hammer Series CCTC, Three-phase, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Secondary Circuits		Circuits Breaker Capacity			Dimensions (3)						Weight		Noise Level
			Disjonc. 120 V	1 In. 240 V	Primary	Second.	Branch Max.	Height In	Height mm	Width In	Width mm	Depth In	Depth mm	lb	kg	dB
9	W	CCTC1A09**B6XXBR	21	7	15	30	20	46	1159	24	610	14	356	355	161	45
15	W	CCTC1A15**B6XXBR	21	7	20	50	40	46	1159	24	610	14	356	452	205	50
22.5	W	CCTC1A22**B6XXBR	21	7	30	70	60	49	1248	24	610	14	356	595	270	50
30	W	CCTC1A30**B6XXBR	21	7	40	125	100	49	1248	24	610	14	356	637	289	50

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: 9 - 15 kVA 1 x FCAN, 1 x FCBN 2 x 4.5%
22.5- 30 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(RH) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

MINI-POWER CENTER

Single-phase and **Three-phase - Copper winding - CCSC** and **CCTC** Series

Not regulated by C802 Standard & NRCAN 2018

Copper Square D Series CCSC, Single-phase, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Secondary Circuits		Circuit Breaker Capacity			Dimensions (3)						Weight		Noise Level
			Disjonc.	1 In.*	Primary	Second.	Branch	Height		Width		Depth				
			120 V	240 V			Max.	In	mm	In	mm	In	mm	lb	kg	dB
5	W	CCSC3B05**B6XXLR	28	14	15	25	20	44	1127	24	610	14	356	262	119	45
10	W	CCSC3B10**B6XXLR	28	14	20	45	40	46	1159	24	610	14	356	331	150	50
15	W	CCSC3B15**B6XXLR	28	14	30	70	60	47	1191	24	610	14	356	377	171	50
25	W	CCSC3B25**B6XXLR	28	14	50	110	100	49	1254	24	610	14	356	518	235	50

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE: *5 - 10 kVA* *1 x FCAN, 1 x FCBN* *2 x 4.5%*
15 - 25 kVA *2 x FCAN, 2 x FCBN* *4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(RH) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

** Available with circuits breakers plug (1/2")*

Copper Square D Series CCTC, Three-phase, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Catalog number (2)	Secondary Circuits		Circuit Breaker Capacity			Dimensions (3)						Weight		Noise Level
			Disjonc.	1 In.*	Primary	Second.	Branch	Height		Width		Depth				
			120 V	208 V			Max.	In	mm	In	mm	In	mm	lb	kg	dB
9	M	CCTC3B09**B6XXBR	27	9	15	30	20	46	1159	24	610	14	356	355	161	45
15	M	CCTC3B15**B6XXBR	27	9	20	45	40	46	1159	24	610	14	356	452	205	50
22.5	M	CCTC3B22**B6XXBR	27	9	25	70	60	49	1248	24	610	14	356	595	270	50
30	M	CCTC3B30**B6XXBR	27	9	35	90	80	49	1248	24	610	14	356	637	289	50

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: *9 kVA* *1 x FCAN, 1 x FCBN* *2 x 4.5%*
15 - 30 kVA *2 x FCAN, 2 x FCBN* *4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(RH) 480 - 208Y/120

(3) The dimensions are applicable for Type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electical schematic diagrams see Section 7, page 20

** Available with circuits breakers plug (1/2")*

NON LINEAR LOAD

POWER QUALITY

Modern Quality Problems and their **Solutions**

Many surveys have been performed and reported about «sensitive electronic equipment» and power quality. These surveys are difficult to compare because of different thresholds for data recording. It is possible to summarize the main problems encountered as follows :

Categories of Power Quality Problems

TRANSIENT

High amplitude and short duration over voltage superimposed on the normal voltage. Transients vary widely in waveforms; amplitude varying from a few hundreds to many thousands of volts, duration varying from 1 micro-second to 10 milliseconds, and may be classified as impulse or oscillatory type. Lightning and switching of power circuits.

SAG and SWELL

Variation of about –20 % (sag) or +10 % (swell) of the AC voltage at power frequency and a duration from a half cycle to a few seconds.

Starting (sag) or de-energizing (swell) of heavy loads or sudden increase (sag) or decrease (swell) of loads.

UNDER and OVER VOLTAGE

Variation in the range of –13 % to +6 % of the AC voltage at the power frequency and lasting more than a few seconds. Circuit overloads or poor voltage regulation.

POWER OUTAGE

Complete loss of power for many milliseconds to many hours. Operation of protective equipment, power equipment failures, accidents involving power transmission lines.

NOISE

Unwanted signals superimposed on a normal sine wave of many sinusoidal waves as small repetitive voltage or frequency transients. Power electronic circuits, arc welding, switching power supplies, electromagnetic and radio frequency interference.

HARMONIC

Representation of a nonsinusoidal periodic wave by the sum of many sinusoidal waves that are integer multiples of the fundamental frequency (60 Hz).

Equipment using DC voltage such as personal computers, office equipment, semiconductor converters and other non linear loads.

The figure (reverse side) illustrates the voltage limits and zones which are considered capable of causing computer problems such as errors, loss of memory or software, and programmable equipment or process control failures.

POWER QUALITY
Modern Quality Problems and their **Solutions**

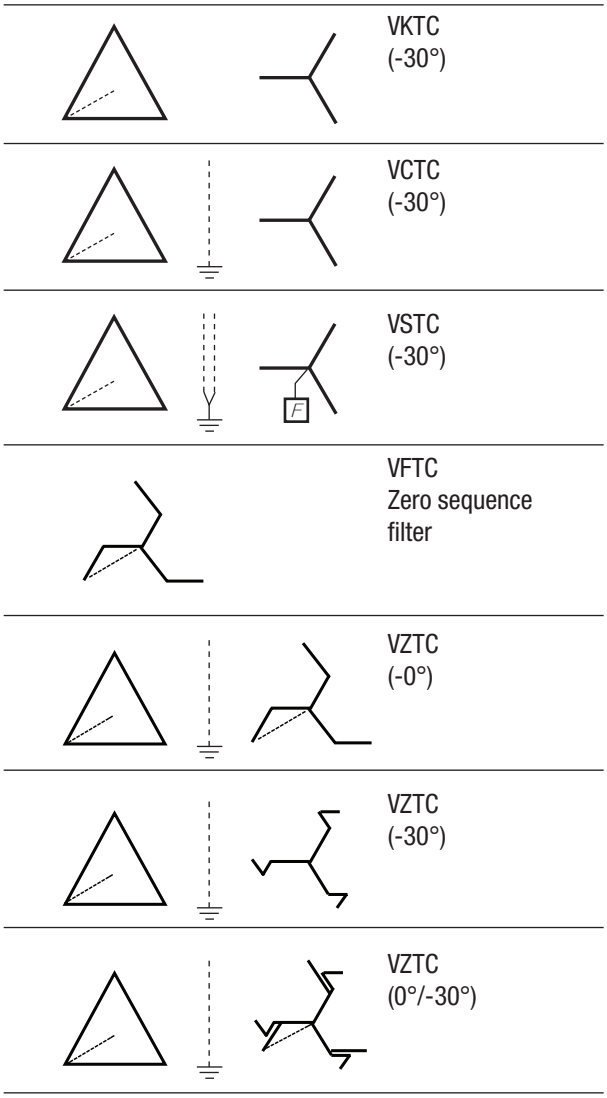
GENERAL RECOMMENDATIONS

- The first thing you need to know is the correct value of your loads (true RMS values). Therefore, «True RMS» instrumentation is important.
- Proper grounding and bonding conditions are essential to ensure the proper function of all equipment and their protection devices.
- All protection devices and transformers should be as close as possible to loads. With TVSS, make sure that you have added a surge protection at the distribution panel or transformer. Transformers close to your loads will give low common mode voltage (neutral-ground) and many small transformers are better than a large one.
- Loads should be segregated as linear and non linear loads.
- Loads should be well balanced on each of your phases.
- Stop your third harmonic currents on the secondary side of transformers with secondary zigzag windings (at low zero sequence impedance), or by trapping them by the means of zero sequence harmonic filters close to your loads.
- Non linear load systems should be balanced and phase shifted between each other. By phase shifting your non linear loads by 30°, 5th and 7th harmonic currents, instead of adding up on your main bus, will cancel each other.
- In the case of an isolated ground installation (orange receptacles) at the distribution panel, install a transformer having one or multiple electrostatic shields, which may be equipped with a high frequency filter and surge protection.
- Verify that there are no ground loops present in the system, such as two computers at two different ground potentials with a communication cable grounded at both ends. The potential difference between the two grounding points creates a circulation current in the communication cable.

NOTE

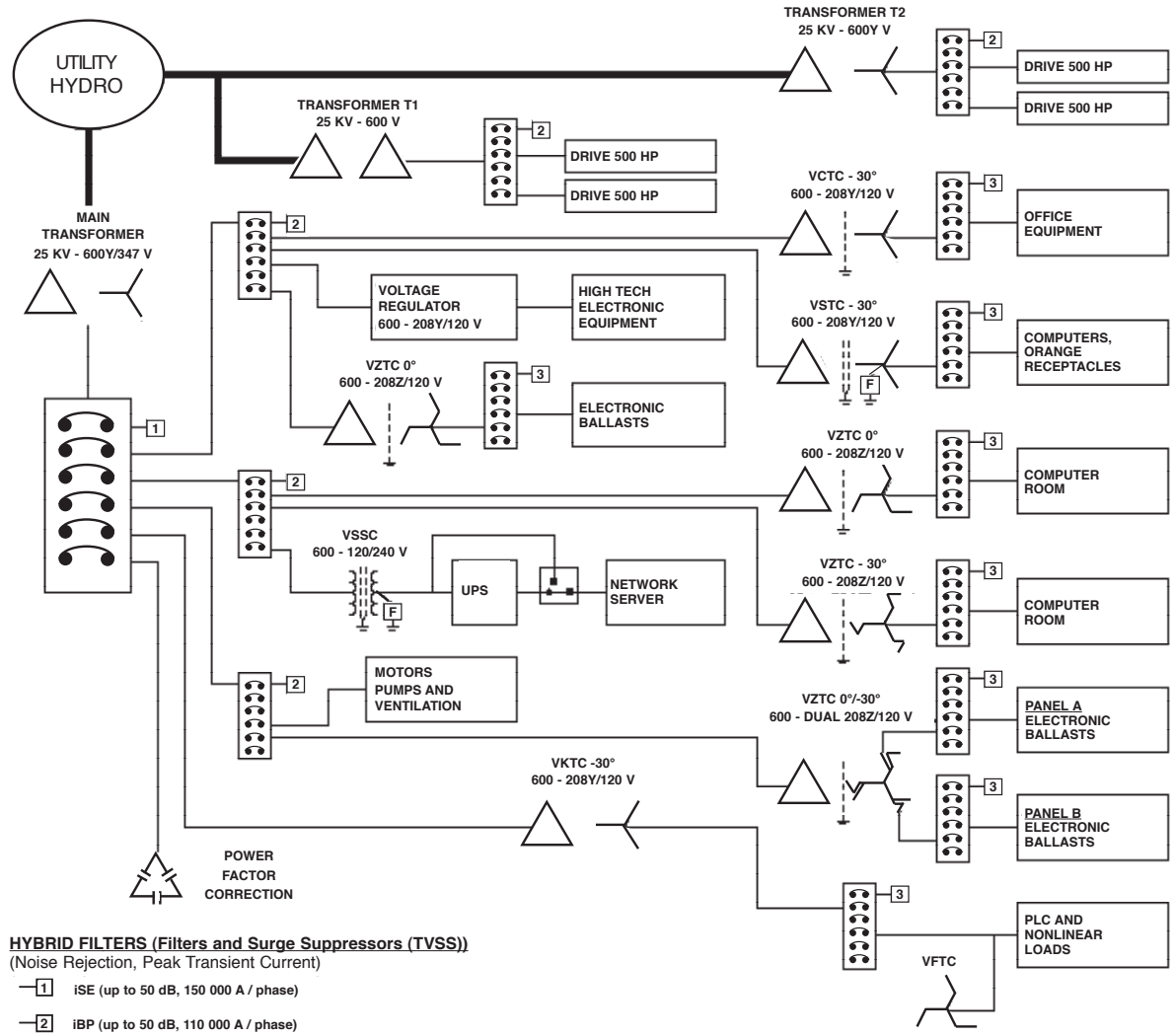
Impedance is very important with non linear loads. Because the impedance value (resistance and/or reactance) increases with frequency, harmonic load currents (current distortion THDi) will create undesirable harmonic voltages (voltage distortion THDv).

TRANSFORMERS



POWER QUALITY
Modern Quality Problems and their **Solutions**

TYPICAL APPLICATION



HYBRID FILTERS (Filters and Surge Suppressors (TVSS))
(Noise Rejection, Peak Transient Current)

1 **iSE (up to 50 dB, 150 000 A / phase)**

2 **iBP (up to 50 dB, 110 000 A / phase)**

3 **OSW (up to 40 dB, 80 000 A / phase)**

NOTE: This diagram is an example for suggestion purpose only and is not representative of a particular situation.

K-RATED TRANSFORMERS
Single-Phase and **Three-Phase** -
Series **CDSC, CDTC, CD2C, CD6C and CD6A**

All CDSC, CDTC, CD6C and CD6A Series transformers meet the most stringent industrial standards on account of their optimal design, superior quality and ease of installation.

The CDSC, CDTC, CD6C and CD6A transformers are manufactured for applications where non linear (nonsinusoidal) loads are predominant. The transformer construction minimizes losses associated with harmonic currents, and the impregnation process ensures a quiet operation.

Examples of harmonic content with K-Factor :

K = 4	K = 13
100 % 60 Hz	100 % 60 Hz
6 % of fundamental for 3rd	33 % of fundamental for 3rd
10 % of fundamental for 5th	20 % of fundamental for 5th
7 % of fundamental for 7th	14 % of fundamental for 7th
5,5 % of fundamental for 9th	11 % of fundamental for 9th
... Up to 25th	... Up to 25th

Applications :

- Non linear loads
- Installations with isolated ground
- Industrial programmable controllers (PLC)
- Protected receptacles for hospitals
- Protected receptacles (orange)

Features and Option :

- E.V.I. Process (Epoxy Vacuum Impregnation) at no additional cost
- Copper winding
- Insulation class 220
- 80°C, 115°C or 150°C temperature rise available
- Compact and easy-to-install enclosure
- Quiet operation
- Proper ventilation
- Neutral sized for twice the rated current
- Voltage of 600 V to 208Y/120 V, 60 Hz, delta-wye, for Three-phase transformers (3 coils)
- Voltage of 600 V to 120/240 V, 60 Hz, for single-phase transformers (2 coils)
- Electrostatic shield
- Special voltages available upon request

K-RATED TRANSFORMERS
Single-Phase - Copper winding - Serie CDSC & CD2C

Copper Series CDSC & CD2C, Single-phase, Type 3R, Primary 600 V, K = 13, 150° C

kVA	Mounting (1)	Catalog Number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
3*	W/F	CDSC0003**A6C1LD	Consult our Customer Service								
5*	W/F	CDSC0005**A6C1LD	Consult our Customer Service								
7.5*	W/F	CDSC0007**A6C1LD	Consult our Customer Service								
10*	W/F	CDSC0010**A6C1LD	Consult our Customer Service								
15	W/F	CD2C0015**A6C1LD	Consult our Customer Service								
25	W/F	CD2C0025**A6C1LD	Consult our Customer Service								
37.5	W/F	CD2C0037**A6C1LD	Consult our Customer Service								
50	F	CD2C0050**A6C1LD	Consult our Customer Service								
75	F	CD2C0075**A6C1LD	Consult our Customer Service								
100	F	CD2C0100**A6C1LD	Consult our Customer Service								
150	F	CD2C0150**A6C1LD	Consult our Customer Service								
200	F	CD2C0200**A6C1LD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE	*3 - 7.5 kVA*	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*
	10 - 200 kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

STANDARD VOLTAGE
**(VK) 600 - 240/120 **(RK) 480 - 240/120

3) Factors k=4 and k=9 dimensions and weights may be lower than data shown in the table.
For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematics diagrams see Section 7, page 20

*** 3 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

K-RATED TRANSFORMERS
Three-Phase - Copper winding - Serie CDTC and CD6C

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V, ESS, K = 4, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**A6A1BD	25	635	21	533	14	356	119	54	40
10*	W/F	CDTC0010**A6A1BD	25	635	21	533	14	356	165	75	45
15	W/F	CD6C0015**A6A1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**A6A1BD	31	775	23	578	18	451	378	171	45
45	W/F	CD6C0045**A6A1BD	31	775	23	578	18	451	461	209	45
50	W/F	CD6C0050**A6A1BD	37	940	28	705	22	552	653	296	45
75	F	CD6C0075**A6A1BD	37	940	28	705	22	552	779	353	50
112.5	F	CD6C0112**A6A1BD	46	1168	31	787	24	616	985	447	50
150	F	CD6C0150**A6A1BD	46	1168	31	787	24	616	1172	532	50
225	F	CD6C0225**A6A1BD	53	1346	37	927	29	724	1851	840	55
300	F	CD6C0300**A6A1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *6 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
10 - 300 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=9 dimensions and weights may be lower that data shown in the table.
For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematics diagrams see Section 5 page 20

*** 6 to 10kVA these units are not regulated by CSA, C802 standards & NRCAN 2018**

K-RATED TRANSFORMERS
Three-Phase - Copper winding - Serie CDTC and CD6C

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V, ESS, K = 4, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**B6A1BD	19	483	18	457	10	254	119	54	40
10*	W/F	CDTC0010**B6A1BD	21	533	20	508	12	305	170	77	45
15	W/F	CD6C0015**B6A1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**B6A1BD	31	775	23	578	18	451	407	185	45
45	W/F	CD6C0045**B6A1BD	37	940	28	705	22	552	653	296	45
50	W/F	CD6C0050**B6A1BD	37	940	28	705	22	552	674	306	45
75	F	CD6C0075**B6A1BD	37	940	28	705	22	552	878	398	50
112.5	F	CD6C0112**B6A1BD	46	1168	31	787	24	616	1172	532	50
150	F	CD6C0150**B6A1BD	53	1346	37	927	29	724	1533	695	50
225	F	CD6C0225**B6A1BD	Consult our Customer Service								
300	F	CD6C0300**B6A1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*6 kVA*	*1 x FCAN, 1 x FCBN 2 x 4.5%*
	10 - 300 kVA	*2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematics diagrams see Section 7, page 20

*** 6 to 10kVA these units are not regulated by CSA, C802 standards & NRCAN 2018**

K-RATED TRANSFORMERS
Three-Phase - Copper winding - Serie CDTC and CD6C

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V, ESS, K = 13, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**A6C1BD	19	483	18	457	10	254	119	54	40
10*	W/F	CDTC0010**A6C1BD	21	533	20	508	12	305	165	75	45
15	W/F	CD6C0015**A6C1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**A6C1BD	31	775	23	578	18	451	378	171	45
45	W/F	CD6C0045**A6C1BD	31	775	23	578	18	451	461	209	45
50	W/F	CD6C0050**A6C1BD	37	940	28	705	22	552	653	296	45
75	P	CD6C0075**A6C1BD	37	940	28	705	22	552	779	353	50
112.5	P	CD6C0112**A6C1BD	46	1168	31	787	24	616	985	447	50
150	P	CD6C0150**A6C1BD	46	1168	31	787	24	616	1172	532	50
225	P	CD6C0225**A6C1BD	53	1346	37	927	29	724	1851	840	55
300	P	CD6C0300**A6C1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalo number

THREE-PHASE : *6 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
10 - 300 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.

For the electrical schematics diagrams see Section 7, page 20

***6 to 10kVA these units are not regulated by CSA, C802 standards & NRCAN 2018**

K-RATED TRANSFORMERS
Three-Phase - Copper winding - Serie CDTC and CD6C

Copper Series CDTC and CD6C, Three-phase, Type 3R, Primary 600 V, ESS, K = 13, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**B6C1BD	25	635	21	533	13	330	148	67	40
10*	W/F	CDTC0010**B6C1BD	25	635	21	533	13	220	181	82	45
15	W/F	CD6C0015**B6C1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**B6C1BD	31	775	23	578	18	451	407	185	45
45	W/F	CD6C0045**B6C1BD	37	940	28	705	22	552	653	296	45
50	W/F	CD6C0050**B6C1BD	37	940	28	705	22	552	674	306	45
75	F	CD6C0075**B6C1BD	37	940	28	705	22	552	878	398	50
112.5	F	CD6C0112**B6C1BD	46	1168	31	787	24	616	1172	532	50
150	F	CD6C0150**B6C1BD	53	1346	37	927	29	724	1533	695	50
225	F	CD6C0225**B6C1BD	Consult our Customer Service								
300	F	CD6C0300**B6C1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : *6 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
10 - 300 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematics diagrams see Section 7, page 20

*** 6 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

K-RATED TRANSFORMERS
Three-Phase - Aluminum winding - Serie CD6C

Aluminum Series CD6A, Three-phase, Type 3R, Primary 600 V, ESS, K = 4, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6A0015**A6A1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6A0030**A6A1BD	31	775	23	578	18	451	378	171	45
45	W/F	CD6A0045**A6A1BD	31	775	23	578	18	451	461	209	45
50	W/F	CD6A0050**A6A1BD	37	940	28	705	22	552	653	296	45
75	F	CD6A0075**A6A1BD	37	940	28	705	22	552	779	353	50
112.5	F	CD6A0112**A6A1BD	46	1168	31	787	24	616	985	447	50
150	F	CD6A0150**A6A1BD	46	1168	31	787	24	616	1172	532	50
225	F	CD6A0225**A6A1BD	53	1346	37	927	29	724	1851	840	55
300	F	CD6A0300**A6A1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electric schematics diagrams see Section 7, page 20

Aluminum Series CD6A, Three-phase, Type 3R, Primary 600 V, ESS, K = 13, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CD6A0015**A6C1BD	26	660	18	464	15	375	267	121	45
30	W/F	CD6A0030**A6C1BD	31	775	23	578	18	451	378	171	45
45	W/F	CD6A0045**A6C1BD	31	775	23	578	18	451	461	209	45
50	W/F	CD6A0050**A6C1BD	37	940	28	705	22	552	653	296	45
75	F	CD6A0075**A6C1BD	37	940	28	705	22	552	779	353	50
112.5	F	CD6A0112**A6C1BD	46	1168	31	787	24	616	985	447	50
150	F	CD6A0150**A6C1BD	46	1168	31	787	24	616	1172	532	50
225	F	CD6A0225**A6C1BD	53	1346	37	927	29	724	1851	840	55
300	F	CD6A0300**A6C1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
For dimensions and weights of transformer with K-Factor higher than K=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematics diagrams see Section 7, page 20

ZERO SEQUENCE FILTERS
Serie **VFTC**

The cost effective solution to zero sequence harmonic problems

The VFTC Series zero sequence filters are specifically designed to reduce third harmonic and zero sequence currents in the neutral of a three-phase four wire system.

These filters are an alternative to the conventional solutions which consist in reducing the existing transformer capacity or in installing a K-rated transformer. They substantially reduce third harmonic currents in the system.

Power quality is improved by a parallel installation as close as possible to non linear loads, thus reducing neutral current and common mode voltage.

Applications :

- Three-phase four wire electrical system with
- Single-phase non linear loads such as lighting
- Ballasts, computers, printers...

Benefits :

- Reduced third harmonic and zero sequence currents in the neutral and the system
- Improved electrical system performance
- Improved power factor
- Improved electrical system capacity
- Reduced neutral-ground voltage
- Reduced main transformer load
- Reduced K-factor rating of load current at main transformer
- Reduced system losses
- Reduced total harmonic distortion (THD)
- Economical and stand-alone solution

Features and Option :

- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- Copper winding
- Insulation class 220
- High-quality grain-oriented steel laminations
- Compact and easy-to-install enclosure
- Quiet operation
- Proper ventilation
- Neutral sized for three times the line current
- 208 V (3 coils) rated voltage
- Ammeter displaying the neutral current in option
- 80°C and 115°C temperature rise in option
- Special voltages available upon request

ZERO SEQUENCE FILTERS

Three-Phase - Copper winding - Serie **VFTC**

Series VFTC, Three-phase, VOLTAGE 280V, 150° C

Zero sequence neutral current A(ms)	Mounting	Dimensions						Weights		Noise level
		Height		Width		Depth				
		po	mm	po	mm	po	mm	lb	kg	dB
100	W/F	21	533	20	508	12	305	169	77	40
175	W/F	21	533	20	508	11	279	163	74	45
250	W/F	28	711	29	737	14	356	372	169	45
350	W/F	28	711	29	737	14	356	372	169	45
450	W/F	30	762	30	762	14	356	550	250	45
600	W/F	30	762	30	762	14	356	550	250	45
800	W/F	37	940	35	889	18	457	715	325	50

(1) W = Wall mount F = Floor mount

(2) No correspondence between approved type 2, 3R and 4 enclosure
All weights and dimensions are approximate and subject to change without notice.

or the electical schematics diagrams see Section 7, page 20

COMPUTER APPLICATION ISOLATED TRANSFORMERS
Single-Phase and Three-Phase - Series CDSC, CDTC, CD2C and CD6C

The cost effective solution for installations with isolated ground (orange receptacles)

All CDSC, CDTC, CD2C and CD6C Series isolated transformers meet the most stringent industrial standards on account of their optimal design, superior quality and ease of installation.

The CDSC, CDTC, CD2C and CD6C transformers use a filtering method that minimizes the capacitance between input and ouput circuits.

Applications :

- Non linear loads
- Installations with isolated ground
- Industrial programmable controllers (PLC)
- Protected receptacles for hospitals
- Protected receptacles (orange)
- Installations where noise and transients are a problem

Features and Options :

- E.V.I. Process (Epoxy Vacuum Impregnation) at no additional cost
- Copper windings
- Insulation class 220
- High-quality grain-oriented steel laminations
- Compact and easy-to-install enclosure
- Quiet operation
- Proper ventilation
- Cost-effective protection of sensitive electronic equipment
- Cost-effective protection of sensitive electronic equipment
- Electrostatic shield
- Common mode noise, attenuation of 60 db minimum
- K=13 Factor
- Neutral sized for twice the rated current
- Voltage of 600 V to 208Y/120 V, 60 Hz, delta-wye, for three-phase transformers (3 coils)
- Voltage of 600 V to 120/240 V, 60 Hz, for single-phase transformers (2 coils)
- Special voltages available upon request

COMPUTER APPLICATION ISOLATED TRANSFORMERS
Single-Phase - Copper winding - Serie **CDSC and CD2C**

Copper Series CDSC and CD2C, Single-phase, Primary 600 V, Type 3R ESS, K = 13, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3) (4)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
3*	W/F	CDSC0003**A6CALD	Consult our Customer Service								
5*	W/F	CDSC0005**A6CALD	Consult our Customer Service								
7.5*	W/F	CDSC0007**A6CALD	Consult our Customer Service								
10*	W/F	CDSC0010**A6CALD	Consult our Customer Service								
15	W/F	CD2C0015**A6CALD	Consult our Customer Service								
25	W/F	CD2C0025**A6CALD	Consult our Customer Service								
37.5	W/F	CD2C0037**A6CALD	Consult our Customer Service								
50	F	CD2C0050**A6CALD	Consult our Customer Service								
75	F	CD2C0075**A6CALD	Consult our Customer Service								
100	F	CD2C0100**A6CALD	Consult our Customer Service								
150	F	CD2C0150**A6CALD	Consult our Customer Service								
200	F	CD2C0200**A6CALD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE-PHASE: *3 - 7.5 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
10 - 200 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD VOLTAGE
**(VK) 600 - 240/120 **(RK) 480 - 240/120

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than k-13, consult our customer service.
All weights and dimensions are subject to change without notice.
For electrical schematics diagrams see Section 7, page 20

*** 3 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

COMPUTER APPLICATION ISOLATED TRANSFORMERS
Three-Phase - Copper winding - Serie **CDTC** and **CD6C**

Copper Series CDTC and CD6C, Three-phase, Primary 600 V, Type 3R, ESS K = 13, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3) (4)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0006**A6CABD	25	635	21	533	13	330	148	67	40
10*	W/F	CDTC0010**A6CABD	25	635	21	533	13	330	181	82	45
15	W/F	CD6C0015**A6CABD	26	660	18	464	15	375	267	121	45
30	W/F	CD6C0030**A6CABD	31	775	23	578	18	451	378	171	45
45	W/F	CD6C0045**A6CABD	31	775	23	578	18	451	461	209	45
50	W/F	CD6C0050**A6CABD	37	940	28	705	22	552	653	296	45
75	F	CD6C0075**A6CABD	37	940	28	705	22	552	779	353	50
112.5	F	CD6C0112**A6CABD	46	1168	31	787	24	616	985	447	50
150	F	CD6C0150**A6CABD	46	1168	31	787	24	616	1172	532	50
225	F	CD6C0225**A6CABD	53	1346	37	927	29	724	1851	840	22
300	F	CD6C0300**A6CABD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number:

THREE-PHASE :
6 kVA — 1 x FCAN, 1 x FCBN 3 x 4.5%
10 - 300 kVA — 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than k-13, consult our customer service.
All weights and dimensions are subject to change without notice.
For all electrical schematics diagrams see Section 7, page 20

*** 6 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

SUPER ISOLATED TRANSFORMERS
Single-Phase and **Three-Phase** - Series **CDSC, CDTC, CD2C and CD6C**

The super isolated solution

All CDSC, CDTC, CD2C and CD6C Series isolated transformers meet the most stringent industrial standards on account of their optimal design, superior quality and ease of installation.

The CDSC, CDTC, CD2C and CD6C transformers have a hybrid design using an isolated transformer with a hybrid filter (filter and surge suppressor (TVSS)).

Applications :

- Non linear loads
- Installations with isolated ground
- Protected receptacles for hospitals
- Protected receptacles (orange)
- Installations where noise and transients are a critical problem.

Features and Option :

- E.V.I. Process (Epoxy Vacuum Impregnation) at no additional cost
- Copper winding
- Insulation class 220
- High-quality grain-oriented steel laminations
- Compact and easy-to-install enclosure
- Quiet operation
- Proper Ventilation
- Cost-effective protection of sensitive electronic equipment
- Multiple electrostatic shields
- Hybrid filter
  - filtering band of 10 kHz to 100 MHz
  - peak transient current of 80 000 A
- Common mode noise attenuation up to 100 dB
- K=13 Factor
- Neutral sized for twice the rated current
- Voltage of 600 V to 208Y/120 V, 60 Hz, delta-wye, for three-phase transformers (3 coils)
- Voltage of 600 V to 120/240 V, 60 Hz, for single-phase transformers (2 coils)
- Special voltages available upon request

SUPER ISOLATED TRANSFORMERS
Single-Phase - Copper winding - Series CD**SC and CD2C**

Copper Series CDSC* and CD2C, Single-phase, Primary 600 V, Type 3R Secondary 120/240V, ESS, K = 13, 150° C

kVA	Mounting (1)	Catalog Number (2)	Dimensions (3) (4) (5)						Weight (3) (4) (5)		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
3*	W/F	CDSC0003**A6CALD	Consult our Customer Service								
5*	W/F	CDSC0005**A6CALD	Consult our Customer Service								
7.5*	W/F	CDSC0007**A6CALD	Consult our Customer Service								
10*	W/F	CDSC0010**A6CALD	Consult our Customer Service								
15	W/F	CD2C0015**A6CALD	Consult our Customer Service								
25	W/F	CD2C0025**A6CALD	Consult our Customer Service								
37.5	W/F	CD2C0037**A6CALD	Consult our Customer Service								
50	F	CD2C0050**A6CALD	Consult our Customer Service								
75	F	CD2C0075**A6CALD	Consult our Customer Service								
100	F	CD2C0100**A6CALD	Consult our Customer Service								
150	F	CD2C0150**A6CALD	Consult our Customer Service								
200	F	CD2C0200**A6CALD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog Number

SINGLE-PHASE: VSSC	*3 - 7.5kVA*	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*
	10kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*
SINGLE-PHASE: VS2C	*15 - 200 kVA*	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

STANDARD VOLTAGE

**(VK) 600 - 240/120 **(RK) 480 - 240/120

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than k=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.

*** 3 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

SUPER ISOLATED TRANSFORMERS
Three-Phase - Copper winding - Series **CDTC** and CD**6C**

Copper Series CDTC* and CD6C, Three-phase, Primary 600 V, Type 3R, Secondary 208Y / 120 V, ESS, K = 13, 150° C

kVA	Mounting (1)	Catalog Number (2)	Dimensions (3) (4) (5)						Weight (3) (4) (5)		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
6*	W/F	CDTC0003**A6CABD	Consult our Customer Service								
10*	W/F	CDTC0010**A6CABD	Consult our Customer Service								
15	W/F	CD6C0015**A6CABD	Consult our Customer Service								
30	W/F	CD6C0030**A6CABD	Consult our Customer Service								
45	W/F	CD6C0045**A6CABD	Consult our Customer Service								
50	W/F	CD6C0050**A6CABD	Consult our Customer Service								
75	F	CD6C0075**A6CABD	Consult our Customer Service								
112	F	CD6C0112**A6CABD	Consult our Customer Service								
150	F	CD6C0150**A6CABD	Consult our Customer Service								
225	F	CD6C0225**A6CABD	Consult our Customer Service								
300	F	CD6C0300**A6CABD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog Number::

THREE-PHASE : VSTC — *6 kVA* — *1 x FCAN, 1 x FCBN*
10 kVA — *2 x FCAN, 2 x FCBN*

THREE-PHASE : VS6C — *15 - 300kVA* — *2 x FCAN, 2 x FCBN*

(3) Factors k=4 and k=13 dimensions and weights may be lower that data shown in the table.
(4) For dimensions and weights of transformer with K-Factor higher than k=13, consult our customer service.
All weights and dimensions are approximate and subject to change without notice.

*** 6 to 10kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

STANDARD VOLTAGE
**(VH) 600 - 208Y/120 **(VK) 600 - 240Y/139
**(VR) 600 - 480Y/277 **(RH) 480 - 208Y/120
**(RK) 480 - 240Y/139

TRANSFORMERS FOR VARIABLE SPEED DRIVES
Series **CITC, CI6C** and **CI6A**

The superior protection for your variable speed drives and motors

All CITC, CI6C and CI6A Series transformers for variable speed drives meet the most stringent industrial standards on account of their optimal design, superior quality and easy installation.

Features :

- 7,5 to 1 000 KVA Three-phase
- E.V.I. process (Epoxy Vacuum Impregnation) at no additional cost
- Primary voltages available: delta 600, 575, 480, 460, 240, 230
- Secondary voltages available: wye or delta 575, 480, 460, 240, 230
- The three-phase transformers supplied by Delta are 3 coil type with delta-wye or delta-delta connections
- Copper winding
- High-quality grain-oriented steel laminations
- Insulation class 220
- Quiet operation

Benefits and Options :

- Special paint (other than ASA 61 grey)
- 115°C and 80°C temperature rise
- Special voltage
- Type 3R.
- Quality assurance programs to ISO 9001

TRANSFORMERS FOR VARIABLE SPEED DRIVES
Three-Phase - Copper winding - Serie **CITC and CI6C**

Copper Series CITC and CI6C, Three-phase, Type 3R, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
7.5*	W/F	CITC0007**A6X1BD	25	635	21	533	13	330	148	67	40
11*	W/F	CITC0011**A6X1BD	25	635	21	533	13	330	165	75	45
14*	W/F	CITC0014**A6X1BD	25	635	21	533	13	330	170	77	45
20	W/F	CI6C0020**A6X1BD	26	660	18	464	15	375	267	121	45
27	W/F	CI6C0027**A6X1BD	31	775	23	578	18	451	641	155	45
34	W/F	CI6C0034**A6X1BD	31	775	23	578	18	451	378	171	45
40	W/F	CI6C0040**A6X1BD	31	775	23	578	18	451	407	185	50
51	W/F	CI6C0051**A6X1BD	31	775	23	578	18	451	461	209	50
63	W/F	CI6C0063**A6X1BD	37	940	28	705	22	552	653	296	50
75	W/F	CI6C0075**A6X1BD	37	940	28	705	22	552	674	306	50
93	F	CI6C0093**A6X1BD	37	940	28	705	22	552	779	353	50
118	F	CI6C0118**A6X1BD	46	1168	31	787	24	616	985	447	50
145	F	CI6C0145**A6X1BD	46	1168	31	787	24	616	1069	485	50
175	F	CI6C0175**A6X1BD	46	1168	31	787	24	616	1172	532	55
220	F	CI6C0220**A6X1BD	53	1346	37	927	29	724	1533	695	55
275	F	CI6C0275**A6X1BD	53	1346	37	927	29	724	1851	840	5545
330	F	CI6C0330**A6X1BD	45Consult our Customer Service45								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE:	*7.5 kVA*	*1 x FCAN, 1 x FCBN 2 x 4.5%*
	11 - 330 kVA	*2 x FCAN, 2 x FCBN 4 x 2.5%*

3) For voltage other than 600V primary, consult our customer service
All weights and dimensions are approximate and subject to change without notice.
For electrical schematics diagrams see Section 7, page 20

*** 7.5 to 14kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

STANDARD VOLTAGE
Primary:
*****600 (V), *****575 (U), *****480 (R), *****460 (Q)
Secondary:
*****600Y/347 (V), *****575Y/332 (U), *****480Y/277 (R),
*****460Y/266 (Q), *****240Y/139 (K), *****230Y/133 (J)

EX: **CI3C0020 ** A6XXBA**

Primary **Secondary**

TRANSFORMERS FOR VARIABLE SPEED DRIVES
Three-Phase- Copper winding - Serie CITC and CI6C

Copper Series CITC and CI6C, Three-phase, Type 3R, ESS, 115° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
7.5*	W/F	CITC0007**B6X1BD	25	635	21	533	13	330	130	59	40
11*	W/F	CITC0011**B6X1BD	25	635	21	533	13	330	169	77	45
14*	W/F	CITC0014**B6X1BD	30	762	25	635	14	356	218	99	45
20	W/F	CI6C0020**B6X1BD	31	775	23	578	18	451	341	155	45
27	W/F	CI6C0027**B6X1BD	31	775	23	578	18	451	378	171	45
34	W/F	CI6C0034**B6X1BD	31	775	23	578	18	451	407	185	45
40	W/F	CI6C0040**B6X1BD	31	775	23	578	18	451	441	200	45
51	W/F	CI6C0051**B6X1BD	37	940	28	705	22	552	653	296	50
63	W/F	CI6C0063**B6X1BD	37	940	28	705	22	552	674	306	50
75	W/F	CI6C0075**B6X1BD	37	940	28	705	22	552	779	353	50
93	F	CI6C0093**B6X1BD	37	940	28	705	22	552	878	398	50
118	F	CI6C0118**B6X1BD	46	1168	31	787	24	616	1069	485	50
145	F	CI6C0145**B6X1BD	46	1168	31	787	24	616	1172	532	50
175	F	CI6C0175**B6X1BD	53	1346	37	927	29	724	1533	695	55
220	F	CI6C0220**B6X1BD	53	1346	37	927	29	724	1851	840	55
275	F	CI6C0275**B6X1BD	Consult our Customer Service								
330	F	CI6C0330**B6X1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*7.5 kVA*	*1 x FCAN, 1 x FCBN*	*2 x 4.5%*
	11 - 330 kVA	*2 x FCAN, 2 x FCBN*	*4 x 2.5%*

(3) For voltage other than 600V primary, consult our customer service
(All weights and dimensions are approximate and subject to change without notice.
For electrical schematic diagrams see Section 7, page 20

*** 7.5 to 14kVA these units are not regulated by CSA, C802 Standards & NRCAN 2018**

STANDARD VOLTAGE
Primary:
*****600 (V), *****575 (U), *****480 (R), *****460 (Q)
Secondary:
*****600Y/347 (V), *****575Y/332 (U), *****480Y/277 (R),
*****460Y/266 (Q), *****240Y/139 (K), *****230Y/133 (J)

EX: **CI3C0020 ** A6XXBA**

Primary Secondary

TRANSFORMERS FOR VARIABLE SPEED DRIVES
Three-Phase- Aluminum winding - Serie **CI6A**

Aluminum Series CI6A, Three-phase, Type 3R, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
20	W/F	CI6A0020**A6X1BD	26	660	18	464	15	375	267	121	45
27	W/F	CI6A0027**A6X1BD	31	775	23	578	18	451	341	155	45
34	W/F	CI6A0034**A6X1BD	31	775	23	578	18	451	378	171	45
40	W/F	CI6A0040**A6X1BD	31	775	23	578	18	451	407	185	45
51	W/F	CI6A0051**A6X1BD	31	775	23	578	18	451	461	209	50
63	W/F	CI6A0063**A6X1BD	37	940	28	705	22	552	653	296	50
75	W/F	CI6A0075**A6X1BD	37	940	28	705	22	552	674	306	50
93	F	CI6A0093**A6X1BD	37	940	28	705	23	552	779	353	50
118	F	CI6A0118**A6X1BD	46	1168	31	787	24	616	985	447	50
145	F	CI6A0145**A6X1BD	46	1168	31	787	24	616	1069	485	50
175	F	CI6A0175**A6X1BD	46	1168	31	787	24	616	1172	532	55
220	F	CI6A0220**A6X1BD	53	1346	37	927	29	724	1533	695	55
275	F	CI6A0275**A6X1BD	53	1346	37	927	29	724	1851	840	55
330	F	CI6A0330**A6X1BD	Consult our Customer Service								

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE : 20 - 330 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

3) For voltage other than 600V primary, consult our customer service
All weights and dimensions are approximate and subject to change without notice.
For electrical schematic diagrams see Section 7, page 20

STANDARD VOLTAGE
Primary:
*****600 (V), *****575 (U), *****480 (R), *****460 (Q)*
Secondary:
*****600Y/347 (V), *****575Y/332 (U), *****480Y/277 (R),
*****460Y/266 (Q), *****240Y/139 (K), *****230Y/133 (J)
EX: **CI3A0020 ** A6XXBA**

Primary **Secondary**

MITIGATOR E-SERIES, SERIES 6

Mitigator e-Series

Stable and reliable power certified high efficiency transformers

Over the last 25 years, Delta Transformers has designed and manufactured apparatus using the technology of magnetics to reduce and eliminate harmonic currents in low voltage power distribution systems. With the introduction of the Mitigator e-Series the company has achieved a high efficiency benchmark in transformer design and technology.

THE DESIGN

The patented* design of the Mitigator e-Series results in a quality unit that is certifiable and tested to meet international standards and users preferences. The field adjustable phase shifting option is first in its class for the industry, allowing increased flexibility in the field.

The assurance of the Delta Quality process is enhanced by the application of an Epoxy Vacuum Impregnation - E.V.I. - process, which provides superior environmental protection for all units.

THE EXPERIENCE

With more than 25 years experience in transformers design and manufacturing, Delta Transformers has introduced the latest in its line of industry leading products: the Mitigator e-Series. This family of transformers, whose primary function is the mitigation of harmonics in typical low voltage power distribution systems, is available in : e-Platinum, e-Gold and e-Silver configurations. These variations give customers the flexibility to choose the right product for each unique application.

THE QUALITY

The Mitigator e-Series provides the industry with a new standard for transformers designed to mitigate harmonics present in typical commercial, institutional and industrial environments. Firsts in its class, the Mitigator e-Series leads the industry in both price and performance.

FIELD ADJUSTABLE PHASE SHIFT*

The Mitigator e-Series comes with optional field adjustable phase shift on the primary winding, a design that allows selection of the desired primary to secondary phase shift while in the field. This innovation gives customers maximum flexibility to adjust each transformer to suit actual application situations.

CORE AND COIL DESIGN

The Mitigator e-Series core is designed using non-aging silicon steel with a three leg common core topology. Its coils are built with electrolytic copper magnetic wire, geometrically designed to allow for uniform cooling. This combined design is such that transformer direct and zero sequence impedance are maintained at a level that reduces voltage distortion generated by harmonic currents.

EPOXY VACUUM IMPREGNATION E.V.I. PROCESS

An epoxy compound is applied to the Mitigator e-Series core and coil in a sealed vacuum pressure tank during production, impervious to cracking or peeling, this compound increases the mechanical strength of the unit and reduces noise emissions.The E.V.I. process enhances transformer performance by improving the winding insulation. The Mitigator e-Series with E.V.I. performs in protecting carefully the core and coil, particularly in heavily contaminated environments.

MITIGATOR E-SERIES, SERIES 6

TESTED AND CERTIFIED TO MEET HIGH EFFICIENCY STANDARDS PER CSA C802.2, NEMA TP-1 / Energy Star requirements

Designed to individual specifications, each unit in the Mitigator e-Series is also built to strict international standards, including CSA standards. Units are performance tested and certified at Delta Transformers state of the art certifying test facilities, where customers are invited to observe the process.

Three-Phase, 60 Hz systems display a characteristic 120 degrees shift between each phase. On systems with balanced loads, the neutral current is zero. Loads that result in the generation of harmonics and the distortion of current and voltage present different characteristics and require specific transformer configurations.

EXAMPLES

The Delta primary – zigzag secondary
(0 or -30)

- Single output three phase secondary
- 0 or -30 phase shift from primary to secondary
- The 3rd 9th and 15th harmonic currents are cancelled by flux opposition at low impedance
- Reduction of current imbalance
- Less voltage distortion due to low zero-sequence impedance
- Improved power factor

The Delta primary zigzag secondary transformer
(-15, -45 or 0, -30)

- Double output three phase secondary
- Cancellation of the 3rd, 5th, 7th, 9th, 15th, 17th and 19th harmonics
- Elimination of the 11th and 13th harmonics (by utilizing the phase shift between the transformer windings so that these currents subtract at the common bus with 11th and 13th harmonic currents existing at the bus)
- Improved power factor

The Mitigator e-Series offers three distinct models to address the full scope of harmonic mitigation applications. The patented* field adjustable phase shifting feature is available on each model. The enclosure is a Type 2, with options available for Type 1 and 3R enclosures.

The Mitigator e-Series like all Delta Transformers products, are manufactured using the Epoxy Vacuum Impregnation E.V.I. Process.

Benefits include :

- Increased mechanical strength
- Reduced noise
- Improved winding insulation
- Enhanced performance in heavily contaminated areas

Delta Transformers is truly a canadian success story. It has been in existence for over twenty five years and continues to be one of the leading canadian suppliers of transformers and associated magnetic products. Its commitment to the market has been demonstrated by its distribution products life time warranty and the high caliber of agents it has located across the continent, consistently responding to the needs of customers. Delta Transformers continues on the road of excellence with the introduction of the Mitigator e-Series.

MITIGATOR E-SERIES, SERIES 6

Mitigator e-Platinum

K-factor profile of 20, suitable for health care environments (including operation rooms) and critical electronic applications such as radar and radio. High efficiency characteristics from 35% - 100% load requirements.

Mitigator e-Gold

K-factor profile of 20, suitable for data centers, computer services and critical loads high efficiency characteristics at 35% load requirements.

Mitigator e-Silver

K-factor profile of 13, suitable for most general-purpose applications. High efficiency characteristics at 35% load requirements.

NOTE

All Mitigator e-Series products are tested and certified to meet High Efficiency Standards per CSA C802.2, NEMA TP-1 requirements.

APPLICATIONS

- Health care institutions
- Commercial office buildings
- Condominiums
- Airport transportation facilities
- Industrial applications

MITIGATOR E-SERIES & SERIES 6

MODEL	e-Silver	e-Gold	e-Platinum
K Factor Load Profile	13	13*	13*
Temperature Rise	150˚C	150˚C Optional 130˚C	150˚C Optional 130˚C
Standard Impedance	Standard	Up to 75 kVA : 2,5 - 4,0 % 112,5 - 300 kVA : 5,0 % max.	Up to 75 kVA : 2,5 - 4,0 % 112,5 - 300 kVA : 5,0 % max.
Efficiency per C802.2-00 2018	At 35 % Loading	At 35 % Loading	From 35 % to 100 % Loading
Electrostatic Shield	Yes	Yes	Yes
Field Adjustable Phase Shift*	Optional	Optional	Optional
Double output	Optional	Optional	Optional
Enclosure	Type 3R	Type 3R	Type 3R
Warranty	10 years pro-rated Mitigator e-Silver	10 years pro-rated Mitigator e-Gold	10 years pro-rated Mitigator e-Platinum
Trade Marks	DELTA TRANSFORMERS TRANSFORMATEURS	DELTA TRANSFORMERS TRANSFORMATEURS	DELTA TRANSFORMERS TRANSFORMATEURS
Certification	CSA®	CSA®	CSA®

* Consult Delta representative for K ratings other than K-13 (CSA C802.5)

* Patent US No. 6,930,578

Mitigator
e-Silver

MITIGATOR E-SERIES SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

Serie Mitigator e-Silver, single output

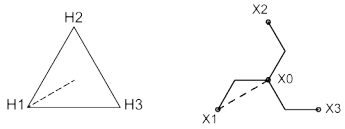
Energy savings :	Transformer must be certified and bear the NRCAN – CSA C802.2 2018
Harmonic Treatment :	3rd, 9th, 15th... on the secondary and 5th, 7th, 17th, 19th... with 30° phase shift on the primary common bus
Load Compatibility :	K-13 load profile, crest factor of 3
Load Imbalance :	Reduction of fundamental current imbalance from secondary to primary of transformer
Windings :	Copper
Secondary Windings :	Wound to mitigate zero sequence current flux. These zero-sequence currents shall no be coupled into the primary winding of the transformer.
Phase Shift :	Windings configured to provide primary-to-secondary phase shift of -30° or 0° (as specified on drawings)
Zero Sequence Data :	Standard
Voltage Distortion :	Non Linear Loads test bench certified
Certified Performance :	Non Linear Loads test bench cerfified
Nameplate Impedance :	4.0 – 6.5% (up to 300 kVA)
Insulation Class :	Class 220
Operating Temperature Rise :	150°C
Efficiency :	NRCAN – CSA C802.2 2018 Program at 35% loading
Electrostatic Shield:	Single shield
Impregnation Method :	Epoxy Vacuum Impregnation
Construction Standards :	Applicable NEMA, CSA and ANSI/IEEE standards
Certification / Labeling :	CSA C22.2 No 47, NRCAN – CSA C802.2 2018
Neutral Rating :	200% of rated secondary phase current
Frequency :	60 Hz
Taps :	4 x 2.5% full capacity taps (2-FCBN + 2-FCAN)
Type :	Three-phase, common core, dry-type convection air cooled
Sound Level :	Per CSA C9, NEMA ST-20
Enclosure :	Type 3R, ASA #61 grey
Warranty :	10 years pro-rated with limited liabililty
OPTIONS	
1. Dual Output :	0°/-30° and -15°/-45° mitigates 3rd, 5th, 7th, 9th, 15th, 17th, 19th... on the secondary and 11th,13th... with 15° phase shift on the primary common bus
2. Field Adjustable Phase Shifts* :	+15°, -15°, 0° supplementary phase shift
3. Operating Temperature Rise :	80°C, 115°C
4. Enclosure :	Open-type
5. Thermocouples :	Type K, one per leg in the secondary winding
6. Thermal Sensors :	NO or NC contact set at 200°C, one per leg in the secondary winding
7. TVSS :	80,000 Amps per mode surge surrent capacity, UL 1449 Approved.
8. Custom Color:	Specify
Standard Product :	Product must be standard item in manufacturer's published catalog. Non linear test bench certified. Custom desigh and / or packaging to meet this specification are not acceptable.
Substitution :	Alternate must be approved by the engineer 10 days prior to bid closing, subject to meeting all aspects of this specification.
Acceptable Manufacturer :	Delta Transformers Inc., MITIGATOR e-Silver series.

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

Mitigator e-Silver

MITIGATOR SERIES e-SILVER DZ(0°)

Aluminum winding
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
K factor up to 13



PHASE SHIFTING
0°

Aluminum e-Silver DZ(0°) Series CZ6A, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6A0015 S911007	26	660	18	457	15	381	276	125	45
30	W/F	CZ6A0030 S911007	31	787	23	584	18	457	413	187	45
45	W/F	CZ6A0045 S911007	37	940	28	711	22	559	548	248	45
75	F	CZ6A0075 S911007	37	940	28	711	22	559	745	338	50
112.5	F	CZ6A0112 S911007	46	1168	31	584	24	610	1129	512	50
150	F	CZ6A0150 S911007	46	1168	31	584	24	610	1185	537	50
225	F	CZ6A0225 S911007	53	1346	37	940	29	737	1945	882	55
300	F	CZ6A0300 S911007	53	1346	37	940	29	737	2390	1084	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%

STANDARD PHASE SHIFTING
0° (0)*

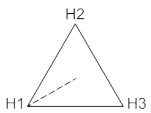
(3) All weights and dimensions are subject to change without notice.

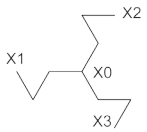
MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

Mitigator e-Silver

MITIGATOR SERIES e-SILVER DZ(-30°)

Aluminum winding
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
K factor up to 13





PHASE SHIFTING
-30°

Alumium e-Silver DZ(-30°) Series CZ6A, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6A0015 S911017	26	660	18	457	15	381	276	125	45
30	W/F	CZ6A0030 S911017	31	787	23	584	18	457	413	187	45
45	W/F	CZ6A0045 S911017	37	940	28	711	22	559	548	248	45
75	F	CZ6A0075 S911017	37	940	28	711	22	559	745	338	50
112.5	F	CZ6A0112 S911017	46	1168	31	584	24	610	1129	512	50
150	F	CZ6A0150 S911017	46	1168	31	584	24	610	1185	537	50
225	F	CZ6A0225 S911017	53	1346	37	940	29	737	1945	882	55
300	F	CZ6A0300 S911017	53	1346	37	940	29	737	2390	1084	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD PHASE SHIFTING
-30° (1)*

(3) All weights and dimensions are subject to change without notice.

Mitigator e-Gold

MITIGATOR E-SERIES, SERIES 6 HARMONIC MITIGATION TRANSFORMERS TECHNICAL SPECIFICATONS

Serie Mitigator e-Gold, single output

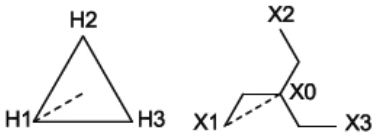
Energy Savings :	Transformers must be certified and bear the NRCAN – CSA C802.2 2018
Harmonic Treatment :	3rd, 9th, 15th... on the secondary and 5th, 7th, 17tt, 19th... with 30° phase shift on the primary common bus
Load Compatibility :	K-13 load profile, crest factor of 5, optional K-20
Load Imbalance :	Reduction of fundamental current imbalance from secondary to primary of transformer
Windings :	Copper
Secondary Windings :	Wound to mitigate zero sequence surrent flux. These zero-sequence currents shall not be coupled into the primary windings of the transformer.
Phase Shift :	Windings configured to provide primary-to-secondary phase shift of -30° or 0° (as specified on drawings)
Zero Sequence Data :	Less than 0.95% ZS impedance, less than 0.3% ZS reactance
Voltage Distortion :	Non linear load test bench certified
Certified Performance :	Non linear load test bench certified
Nameplate Impedance :	2.5 – 4.0% (up to 75 kVA), 5.0% max (112.5-300 kVA)
Insulation Class :	Class 220
Operating Temperature Rise :	150°C
Efficiency :	NRCAN – CSA C802.2 2018 program at 35% loading
Electrostatic Shield :	Single shield
Impregnation Method :	Epoxy vacuum impregnation
Construction Standards :	Applicable NEMA, CSA, and ANSI/IEEE standards
Certification / Labeling :	CSA C22.2 No 47, NRCAN – CSA C802.2 2018
Neutral Rating :	200% of rated secondary phase current
Frequency :	60 Hz
Taps :	4 x 2.5% full capacity taps (2-FCBN + 2-FCAN)
Type :	Three-phase, common core, dry-type, convection air cooled
Sound Level :	Per CSA C9, NEMA ST-20
Enclosure :	Type 3R, ASA #61 grey
Warranty :	10 years pro-rated, with limited liability
OPTIONS	
1. Dual Output :	0°/-30° and -15°/-45° mitigates 3rd, 5th, 7th, 9th, 15th, 17th, 19th... on the secondary and 11th,13th... with 15° phase shift on the primary common bus
2. Field Adjustable Phase shift* :	+15°, -15°, 0° supplementary phase shift
3. Operating Temperature Rise :	80°C, 115 °C
4. Enclosure :	Open-type
5. Thermocouples :	Type K, one per leg in the secondary winding
6. Thermal Sensors :	NO and NF contact set at 200°C, one per leg in the secondary winding
7. TVSS :	80,000 Amps per mode surge current capacity, UL 1449 approved, EMI / RFI filtering
8. Custom Color :	Specify
Standard Product :	Product must be standard item in manufacturer's published catalog. Non linear test bench certified. Custom design and / or packaging to meet this specification are not acceptable.
Substitution :	Alternate must be approved by the engineer 10 days prior to bid closing, subject to meeting all aspects of this specification
Acceptable Manufacturer :	Delta Transformers Inc. MITIGATOR e-Gold Series

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

Mitigator e-Gold

MITIGATOR e-GOLD DZ(0°) SERIES

Copper windings
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
Optional 130°C
Load profile K13



PHASE SHIFTING
0°

Copper e-Gold DZ(0°) Series CZ6C, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6C0015 S912107	26	660	18	457	15	381	284	128	45
30	W/F	CZ6C0030 S912107	31	787	23	584	18	457	430	195	45
45	W/F	CZ6C0045 S912107	37	940	28	711	22	559	504	228	45
75	F	CZ6C0075 S912107	37	940	28	711	22	559	900	408	50
112.5	F	CZ6C0112 S912107	46	1168	31	584	24	610	1048	475	50
150	F	C63C0150 S912107	46	1168	31	584	24	610	1328	602	50
225	F	CZ6C0225 S912107	53	1346	37	940	29	737	2061	935	55
300	F	CZ6C0300 S912107	53	1346	37	940	29	737	2394	1086	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD PHASE SHIFTING
0° (0)*

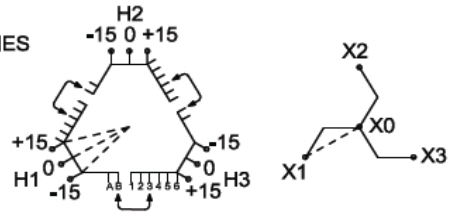
(3) All weights and dimensions are subject to change without notice.

Consult Delta representative for K rating other than K-13 (CSA C802.5 Guideline for evaluation the efficiency of dry-type transformers under non-linear loading)

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

MITIGATOR e-GOLD FAPST-Z(-15°/0°/+15°) SERIES

Copper windings
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
Optional 130°C
Load profile K13



PHASE SHIFTING
-15°/0°/+15°

Copper e-Gold FAPST-Z(-15°/-30°/+15°) Series CZ6C, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6C0015 S912167	26	660	18	457	15	381	284	128	45
30	W/F	CZ6C0030 S912167	31	787	23	584	18	457	430	195	45
45	W/F	CZ6C0045 S912167	37	940	28	711	22	559	504	228	45
75	F	CZ6C0075 S912167	37	940	28	711	22	559	900	408	50
112.5	F	CZ6C0112 S912167	46	1168	31	584	24	610	1048	475	50
150	F	CZ6C0150 S912167	46	1168	31	584	24	610	1328	602	50
225	F	CZ6C0225 S912167	53	1346	37	940	29	737	2061	935	55
300	F	CZ6C0300 S912167	53	1346	37	940	29	737	2394	1086	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: 15 - 300 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
(3) All wieghts and dimensions are subject to change without notice.

Consult Delta representative for K rating other than K-13 (CSA C802.5 Guideline for evaluation the efficiency of dry-type transformers under non-linear loading)

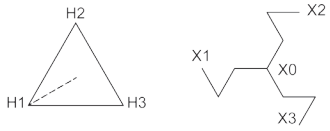
STANDARD PHASE SHIFTING
-30° (6)*

Mitigator e-Gold

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

MITIGATOR SERIES e-GOLD DZ(-30°)

Copper windings
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
Optional 130°C
K factor up to 13



PHASE SHIFTING
-30°

Copper e-Gold DZ(-30°) Series CZ6C, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6C0015 S912117	26	660	18	457	15	381	284	128	45
30	W/F	CZ6C0030 S912117	31	787	23	584	18	457	430	195	45
45	W/F	CZ6C0045 S912117	37	940	28	711	22	559	504	228	45
75	F	CZ6C0075 S912117	37	940	28	711	22	559	900	408	50
112.5	F	CZ6C0112 S912117	46	1168	31	584	24	610	1048	475	50
150	F	CZ6C0150 S912117	46	1168	31	584	24	610	1328	602	50
225	F	CZ6C0225 S912117	53	1346	37	940	29	737	2061	935	55
300	F	CZ6C0300 S912117	53	1346	37	940	29	737	2394	1086	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD PHASE SHIFTING
-30° (1)*

(3) All weights and dimensions are subject to change without notice.

Consult Delta representative for K rating other than K-13 (CSA C802.5 Guideline for evaluation the efficiency of dry-type transformers under non-linear loading)

MITIGATOR E-SERIES, SERIES 6 HARMONIC MITIGATION TRANSFORMERS TECHNICAL SPECIFICATONS

Mitigator e-Platinum

Mitigator Series e-Platinum, single output

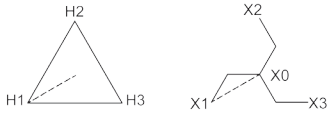
Energy Savings :	Transformer must be certified and bear the NRCAN – CSA C802.2 2018
Harmonic Treatment :	3rd, 9th, 15th... on the secondary and 5th, 7th, 17th, 19th... with 30° phase shift on the primary common bus
Load Compatibility :	K-13 load profile, crest factor of 5, optional K-20
Load Imbalance :	Reduction of fundamental current imbalance from secondary to primary of transformer
Windings :	Copper
Secondary Windings :	Wound to mitigate zero sequence current flux. These zero-sequence currents shall not be coupled into the primary winding of the transformer.
Phase shift	Windings configuration to provide primary-to-secondary phase shift of -30° or 0° (as specified on drawings)
Zero sequence Data :	Less than 0.95% ZS impedance, less that 0.3% ZS reactance
Voltage Distortion :	Non linear loads test bench certified
Certified Performance :	Non linear loads test bench certified
Nameplate Impedance:	2.5 – 4.0% (up to 75 kVA), 5.0% (112.5-300 kVA)
Insulation Class :	Class 220
Operation Temperature Rise :	150°C
Efficiency :	NRCAN – CSA C802.2 2018 Program from 35% to 100% loading
Electrostatic Shield :	Single Shield
Impregnation Method :	Epoxy Vacuum Impregnation
Construction Standards :	Applicable NEMA, CSA, and ANSI/IEEE standard
Certification / Labeling :	CSA C22.2 No 47, NRCAN – CSA C802.2 2018
Neutral Rating :	200% of rated secondary phase current
Frequency :	60 Hz
Taps :	4 x 2.5% Full capacity taps, (2-FCBN + 2-FCAN)
Type :	Three-phase common core, dry-type, convection air cooled
Sound Level :	Per CSA C9, NEMA ST-20
Enclosure :	Type 3R, ASA #61 Grey
Warranty :	10 year pro-rated, with limited liability
OPTIONS	
1. Dual Output :	0°/-30° and -15°/-45° mitigates 3rd, 5th, 7th, 9th, 15th, 17th, 19th... on the secondary and 11th,13th... with 15° phase shift on the primary common bus
2. Field Adjustable Phase Shifts* :	+15°, -15°, 0° supplementary phase shift
3. Operation Temperature Rise :	80°C, 115°C
4. Enclosure :	Open type
5. Thermocouples :	Type K, one per leg in the secondary winding
6. Thermal Sensors :	NO or NC, contact set at 200°C, one per leg in the secondary winding
7. TVSS :	80,000 Amps per mode surge current capacity, UL 1449 approved, EMI / RFI filtering
8. Custom Color:	Specify
Standard Product :	Product must be standard item in manufacturer's published catalog. Non linear test bench certified. Custom design and / or packaging to meet this specification are not acceptable.
Substitution :	Alternate must be approved by the engineer 10 days prior to bid closing. subject to meeting all aspects of this specification
Acceptable Manufacturer:	Delta Transformers Inc., Serie MITIGATOR e-Platinum

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

Mitigator e-Platinum

MITIGATOR SERIES e-PLATINUM DZ(0°)

Copper windings
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
Optional 130°C
K factor up to 13



PHASE SHIFTING
0°

Copper e-Platinum DZ(0°) Series CZ6C, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6C0015 S913107	26	660	18	457	15	381	287	130	45
30	W/F	CZ6C0030 S913107	31	787	23	584	18	457	446	202	45
45	W/F	CZ6C0045 S913107	37	940	28	711	22	559	544	247	45
75	F	CZ6C0075 S913107	37	940	28	711	22	559	897	407	50
112.5	F	CZ6C0112 S913107	46	1168	31	584	24	610	1073	487	50
150	F	CZ6C0150 S913107	46	1168	31	584	24	610	1386	629	50
225	F	CZ6C0225 S913107	53	1346	37	940	29	737	2093	949	55
300	F	CZ6C0300 S913107	53	1346	37	940	29	737	2584	1172	55

(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE: *15 - 300 kVA* *2 x FCAN, 2 x FCBN 4 x 2.5%*

STANDARD PHASE SHIFTING
0° (0)*

(3) All weights and dimensions are subject to change without notice.

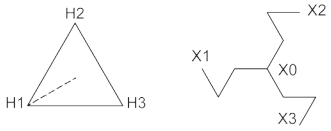
Consult Delta representative for K rating other than K-13 (CSA C802.5 Guideline for evaluation the efficiency of dry-type transformers under non-linear loading)

Mitigator e-Platinum

MITIGATOR E-SERIES, SERIES 6
HARMONIC MITIGATION TRANSFORMERS
TECHNICAL SPECIFICATONS

MITIGATOR SERIES e-PLATINUM DZ(-30°)

Copper windings
3 phase 600 - 208/120
150°C / 60 Hz / ESS / CSA C802.2
Optional 130°C
K factor up to 13



PHASE SHIFTING
-30°

Copper e-Platinum DZ(-30°) Series CZ6C, Three-phase, Type 3R, Primary 600 V, Secondary 208/120V, Load Profile K13, ESS, 150° C

kVA	Mounting (1)	Catalog number (2)	Dimensions (3)						Weight		Noise Level
			Height		Width		Depth				
			In	mm	In	mm	In	mm	lb	kg	dB
15	W/F	CZ6C0015 S913117	26	660	18	457	15	381	287	130	45
30	W/F	CZ6C0030 S913117	31	787	23	584	18	457	446	202	45
45	W/F	CZ6C0045 S913117	37	940	28	711	22	559	544	247	45
75	F	CZ6C0075 S913117	37	940	28	711	22	559	897	407	50
112.5	F	CZ6C0112 S913117	46	1168	31	584	24	610	1073	487	50
150	F	CZ6C0150 S913117	46	1168	31	584	24	610	1386	629	50
225	F	CZ6C0225 S913117	53	1346	37	940	29	737	2093	949	55
300	F	CZ6C0300 S913117	53	1346	37	940	29	737	2584	1172	55

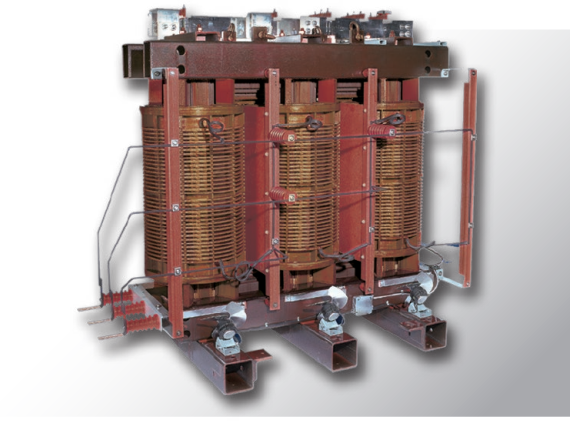
(1) W = Wall mount F = Floor mount
(2) Catalog number

THREE-PHASE :	*15 - 300 kVA*	*2 x FCAN, 2 x FCBN 4 x 2.5%*	STANDARD PHASE SHIFTING *-30°* (1)*

(3) All weights and dimensions are subject to change without notice.

Consult Delta representative for K rating other than K-13 (CSA C802.5 Guideline for evaluation the efficiency of dry-type transformers under non-linear loading)

POWER



Power your future

Power Transformers
Dry-Type

Advantages of the E.V.I. Process

E.V.I. Power Transformer

POWER TRANSFORMERS

Power your future

Delta Transformers specializes in the design and manufacture of Dry-Type power transformers of up to 15,000 kVA and 34.5 kV class.

With its modern plant and equipment, Delta Transformers caters to all your power transformer needs.

Delta Transformers power transformers are ideal for industrial, institutional and commercial applications.

Our Speciality, is Flexibility

Our manufacturing methods allow custom designs for special needs.

Performance and Value

Delta Transformers has the ability to generate new and creative solutions to meet the changing needs of the industry. With over 150 years experience in special application transformer design, our engineers can meet your most demanding application requirements.

Quality material, safe construction, conservative designs backed by our quality assurance program ensure trouble-free performance for the life of the transformer. Quality fabrication with proven insulation materials and testing with state-of-the-art equipment assures reliability and safety.

Optimized computer design systems are used to analyse dielectric, magnetic and thermal effects to maximize the life of your transformers. Automated drafting is used for design accuracy.

From design to approval for shipments, integrated MRP and scheduling systems coupled with our flexibility, ensure on-time delivery.

FACILITIES

Our manufacturing plant with power transformer building capacity, located in Granby, is fully integrated and equipped to handle special requirements and coordination from engineering to shipping.

SERVICE ADVANTAGES

- Quick on-time delivery
- Troubleshooting, repair, field support
- Service and retrofit on all known brand names

NRCan REGULATIONS

(Natural Resources Canada)

- Dry-Type Transformers NRCAN 2018

Our Product Range

Dry-Type Power Transformers up to 15,000 kVA and 34.5 kV class are offered with or without a wide range of enclosures suitable for indoor and outdoor installations. Our Dry-Type transformer line manufactured in Granby Quebec facility complements the complete General Purpose transformer line offered by Delta Transformers.

We can design to meet the most demanding space and performance criteria to the latest ANSI, IEEE and CSA standards.

ADVANTAGES OF DRY-TYPE TRANSFORMERS

BPC transformers replacement

1. No oil as medium (other than air) for dielectric insulation;
2. Proven for decades of interior installations across Canada;
3. Solutions for more than 95 % of new installations following the regulations for the abolition of BPC;
4. Liquid filled transformers for domestic use are no less expensive than dry-type transformers ... Liguid for domesic use is much more expensive than oil for outdoor transformers … not the same liquid is used;
5. Delivery time usually longer for liquid filled transformers;
6. Maintenance program is more expensive (periodic checks of oils by specialized external firm);
7. Core and coils are much more accessible on a dry-type transformer;
8. A retention basin is required with liquid filled transformer;
9. Insurance for buildings is more expensive because of the liquid in a transformer : greater risks of loss and damage;
10. The concept of an oil filled transformer is not considered a solution in harmony with environmental protection;
11. The total cost of replacement of a BPC transformer by another liquid filled transformer is often more expensive if you consider all the extra infrastructure work (basin), insurance and maintenance costs;
12. Delta has successfully completed several projects to replace BPC filled transformers in recent years. Not too necessarily to compete head on with a liquid filled but on an environmental approach and long-term reliability, performance and lower maintenance costs;
13. The transformer enclosure is of a knockdown construction allowing for easy assembly and disassembly at their final locations on sites with restrictions;
14. In the majority of its projects, Delta was able to provide compact arrangements to meet the floor space available for these replacements;
15. Delta has achieved a high level of competence in the replacement of BPC transformers, including the site measurements and any technical assistance as needed.

PERFORMANCE FIRST: E.V.I. AT NO ADDITIONAL COST

Every Delta Transformers is Epoxy Vacuum Impregnated (E.V.I.) at no additional cost.

The E.V.I. process features the following benefits :

- Increased mechanical strength;
- Reduced noise;
- Improved winding insulation;
- Superior partial discharge performance;
- Compatible with cast coil performance;
- Enhanced performance in heavily contaminated environments.

This resin-based product is an ideal coating agent.

In addition to their superior quality, transformers with E.V.I. have a longer life.

(E.V.I.) EPOXY VACUUM IMPREGNATION

The advantages of a cast coil without the inconveniences

Advantages of the Delta Transformers E.V.I. Process

MECHANICAL

Both cast coil and Delta Transformers E.V.I. process make use of epoxy as an environmental protection.

EPOXY ENCAPSULATION VS. EPOXY CASTING

In a cast epoxy transformer, the resin is the major part of the insulation system. In the Delta Transformers E.V.I. Nomex® and air are the insulation media; epoxy is used for its environmental protective properties only. The Delta Transformers E.V.I. gives improved performance since its encapsulation is not subject to cracking which is often related to solid epoxy casting.

NO CRACKS

The Delta Transformers E.V.I. process has totally eliminated the cracking problems which could occur in a solid cast insulation, due to temperature differentials through the thickness of the resin and the thermal expansion of the coils. In the Delta Transformers E.V.I. design, the epoxy is thick enough to provide environmental protection but thin enough that internal stresses do not develop. Since the coils are self-supporting, it enables us to use a flexible form of epoxy which will accommodate the expansion and contraction of the coil which it protects.

INHERENTLY STRONG

The Delta Transformers E.V.I design is inherently strong and self-supporting.

The Delta Transformers E.V.I. epoxy being highly flexible, it can endure thermal and mechanical stresses without cracking. In a solid cast epoxy transformers, it is usually necessary to incorporate spring type pressure blocks and fiberglass reinforcements to combat stresses between components in order to minimize cracking.

ELECTRICAL

With the Delta Transformers E.V.I design, as opposed to cast-coil, the epoxy resin is not part of the insulation system. Its function is purely mechanical: a great sealer to protect a great transformer. In fact, in the Delta Transformers E.V.I.: the insulation media are Nomex® and air.

THE DELTA TRANSFORMERS E.V.I. EPOXY

The Delta Transformers E.V.I. Power Transformers are recommended for use in very humid and hostile environments.

Typical applications would be:

- automotive industry;
- pulp and paper mills;
- stell mills;
- mines;
- water treatment plants;
- cement plants;
- chemical plants;
- and other industrial locations where the atmosphere is especially humid, dirty and/or corrosive, including outdoor and marine applications such as shipyards and offshore drillings rigs.

WE BUILD FOR THE FUTURE

OUR PEOPLE : YOUR PARTNERS

All of our employees are committed to producing the highest quality Dry-Type transformers. Well-trained tradespeople combine their skills with those of qualified and experienced engineers, technicians and drafting personnel to design and manufacture highly efficient products that consistently meet customer requirements.

Our team's expertise in the design and manufacture of power transformers gives us the ability to create innovative solutions to application problems. Our success in the power transformer market confirms the ability of our people to deliver high-tech products on time.

Our experienced customer service team can help you and your clients with any technical or logistic issue at all times. Our before and after-sale service is second to none.

RESEARCH AND DEVELOPMENT

Equipped with their own lab and specialized simulation software, our research and development engineers continously work at improving designs, methods and materials.

ENVIRO – GUARD®

OPTIMIZED EPOXY VACUUM IMPREGNATION FOR HARSH ENVIRONMENT

- Maximize sealing of windings and conductor leads.
- Improved resistance to shrinking and cracking during lifetime operation.
- Provide hydrolytic stability under electrical stress, environmental contamination or abrupt temperature variation.

POWER TRANSFORMERS

Dry-Type - Class 5 KV, 15 KV, 25 KV, and 34,5KV

Mechanical Characteristics
Standard and options

Cooling

Type ANN

Options

- AFN (fan-cooled)
- Provision for AFN

Enclosures

Type 1, steel ASA 61 grey.

Options

- Type 2, 3R & 4 enclosure
- Special color or finish
- Front or rear access only
- Doors with locks or mechanical interlocks

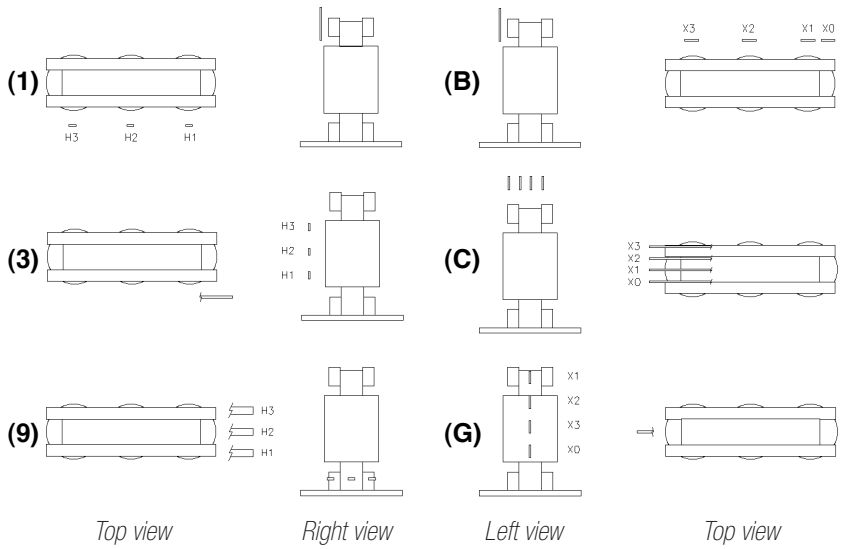
Connection Coordination

Position of LV and HV outlets, based on combination 1B opposite.

- Possible combinations based on diagrams 1, 3, 9 (HT) and B, C, G (BT) with alternate outputs (left or right).
- Special dimensions for outputs and mounting holes on connections.
- Other connections may be available upon request and with specifications.

Options and Accessories

- Temperature probes in windings
- Temperature indicators with 2 or 3 contacts
- Fans
- Control panel
- Terminals, flexible connectors and other types for outputs
- Provision for pads to facilitate moving
- Lighting arrester
- Grounding resistor
- Electrostatic shield
- Designed for use with rectifiers



Connexions HT **Connexions BT**

POWER TRANSFORMERS

Dry-Type - Copper winding - Class 5 KV, 15 KV, 25 KV, and 34,5KV

Copper Class 5kV, Three-phase, Primary 4160 V, Secondary 600Y / 346 V, 150° C, BIL 30kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core & Coils (Figure 1)						Weight		Dimensions including enclosurer (cable in / cables out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
150	F	5.5	4 x 2.5	Consult our Sales Department																
225	F	6.7	4 x 2.5	Consult our Sales Department																
300	F	4.5	4 x 2.5	Consult our Sales Department																
450	F	5.5	4 x 2.5	Consult our Sales Department																
500	F	5.5	4 x 2.5	Consult our Sales Department																
600	F	6	4 x 2.5	Consult our Sales Department																
750	F	6	4 x 2.5	Consult our Sales Department																
1000	F	6	4 x 2.5	Consult our Sales Department																
1250	F	6	4 x 2.5	Consult our Sales Department																
1500	F	6	4 x 2.5	Consult our Sales Department																
2000	F	6	4 x 2.5	Consult our Sales Department																
2500	F	6.5	4 x 2.5	Consult our Sales Department																

(1) W = Wall mount F = Floor mount
(2) Taps :
(3) Not applicable to Type 2, 3R and 4 enclosures.
All weights and dimensions are approximate and subject to change without notice.

See section 3 page 9 for figure 1 and 2

Copper Class 15kV, Three-phase, Primary 12470 V or 13800 V, Secondary 600Y / 346 V, 150° C, BIL 95kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core & Coils (Figure 1)						Weight		Dimensions including enclosure (cable in / cables out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
500	F	5.5	4 x 2.5	Consult our Sales Department																
750	F	6	4 x 2.5	Consult our Sales Department																
1000	F	6	4 x 2.5	Consult our Sales Department																
1250	F	6	4 x 2.5	Consult our Sales Department																
1500	F	6	4 x 2.5	Consult our Sales Department																
2000	F	6.5	4 x 2.5	Consult our Sales Department																
2500	F	6.5	4 x 2.5	Consult our Sales Department																
3000	F	7	4 x 2.5	Consult our Sales Department																
3750	F	7.5	4 x 2.5	Consult our Sales Department																

(1) W = Wall mount F = Floor mount
(2) Taps :
(3) Not applicable to Type 2, 3R and 4 enclosure.
All weights and dimensions are subject to change without notice.

See section 3 page 9 for figure 1 and 2

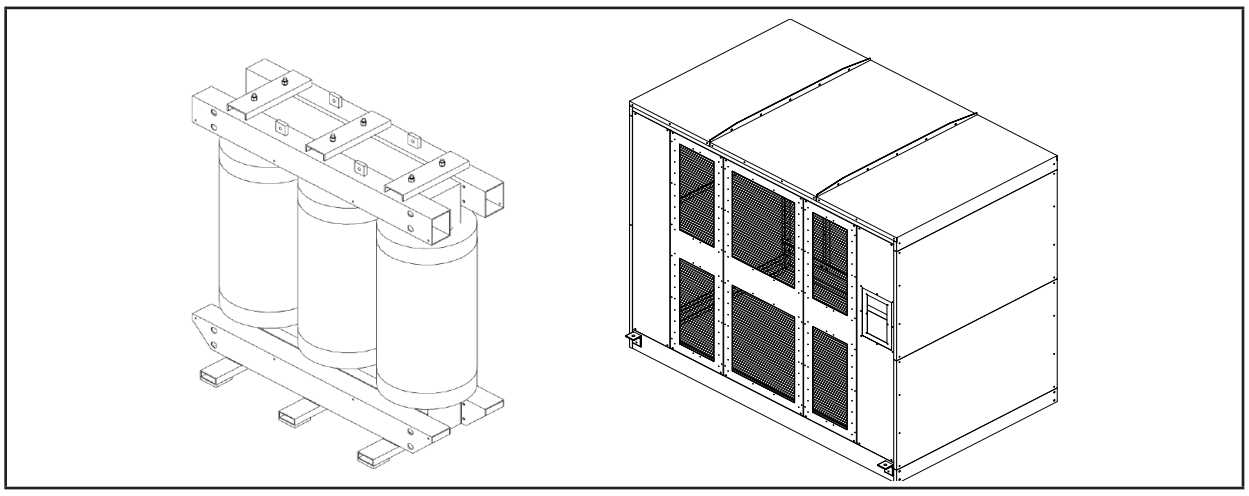
POWER TRANSFORMERS

Dry-Type - Classes 5 KV, 15 KV, 25 KV, et 34,5KV

Copper Class 25kV, Three-phase, Primary 24 940 V, Secondary 600Y / 346 V, 150° C, BIL 125kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core& Coils (Figure 1)						Weight		Dimensions including enclosure (cable in / cable out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
500	F	6	4 x 2.5							Consult our Sales Department										
750	F	6.5	4 x 2.5							Consult our Sales Department										
1000	F	6.5	4 x 2.5							Consult our Sales Department										
1250	F	6.5	4 x 2.5							Consult our Sales Department										
1500	F	6.5	4 x 2.5							Consult our Sales Department										
2000	F	7	4 x 2.5							Consult our Sales Department										
2500	F	7	4 x 2.5							Consult our Sales Department										
3000	F	7.5	4 x 2.5							Consult our Sales Department										
3750	F	8	4 x 2.5							Consult our Sales Department										

(1) W = Wall mount F = Floor mount
(2) Taps :
(3) Not applicable to Type 2, 3R and 4 enclosure.
All weights and dimensions are subject to change without notice.



POWER TRANSFORMERS

Dry-Type - Aluminum winding - Class 5 KV, 15 KV, 25 KV, and 34,5KV

Aluminum Class 5kV, Three-phase, Primary 4160 V, Secondary 600Y / 346 V, 150° C, BIL 30kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core & Coils (Figure 1)						Weight		Dimensions including enclosure (cable in / cable out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
150	F	5	4 x 2.5							Consult our Sales Department										
225	F	5.5	4 x 2.5							Consult our Sales Department										
300	F	5	4 x 2.5							Consult our Sales Department										
450	F	6	4 x 2.5							Consult our Sales Department										
500	F	5	4 x 2.5							Consult our Sales Department										
600	F	6.2	4 x 2.5							Consult our Sales Department										
750	F	6	4 x 2.5							Consult our Sales Department										
1000	F	6	4 x 2.5							Consult our Sales Department										
1250	F	6	4 x 2.5							Consult our Sales Department										
1500	F	6	4 x 2.5							Consult our Sales Department										
2000	F	6	4 x 2.5							Consult our Sales Department										
2500	F	6.5	4 x 2.5							Consult our Sales Department										

(1) W = Wall mount F = Floor mount
(2) Taps:
(3) Not applicable to Type 2, 3R and 4 enclosure.
All weights and dimensions are approximate and subject to change without notice.

Aliminum Class 15kV, Three-phase, Primary 12470 V or 13800 V, Secondary 600Y / 346 V, 150° C, BIL 95kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core & Coils (Figure 1)						Weight		Dimensions including enclosure (cable in / cable out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
500	F	5.5	4 x 2.5							Consult our Sales Department										
750	F	6	4 x 2.5							Consult our Sales Department										
1000	F	6	4 x 2.5							Consult our Sales Department										
1250	F	6	4 x 2.5							Consult our Sales Department										
1500	F	6	4 x 2.5							Consult our Sales Department										
2000	F	6.5	4 x 2.5							Consult our Sales Department										
2500	F	6.5	4 x 2.5							Consult our Sales Department										
3000	F	7	4 x 2.5							Consult our Sales Department										
3750	F	7.5	4 x 2.5							Consult our Sales Department										

(1) W = Wall mount F = Floor mount
(2) Taps:
(3) Not applicable to Type 2, 3R and 4 enclosure.
All weights and dimensions are subject to change without notice.

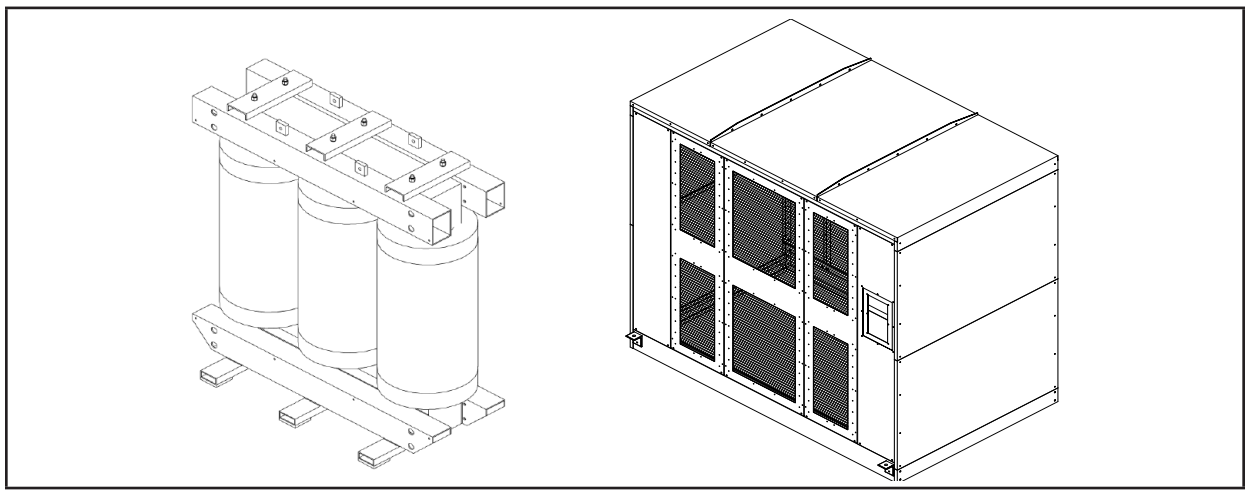
POWER TRANSFORMERS

Dry-Type - Class 5 KV, 15 KV, 25 KV, and 34,5KV

Aluminum Class 25kV, Three-phase, Primary 24940 V, Secondary 600Y / 346 V, 150° C, BIL 125kV

kVA	Mounting (1)	Impe-dance	Taps (2)	Dimensions Core & Coils (Figure 1)						Weight		Dimensions including enclosure (cable in / cable out) (Figure 2)						Weight		Noise Level
				Height		Width		Depth				Height		Width		Depth				
			%	In	mm	In	mm	In	mm	lb	kg	In	mm	In	mm	In	mm	lb	kg	dB
500	F	6	4 x 2.5	Consult our Sales Department																
750	F	6.5	4 x 2.5	Consult our Sales Department																
1000	F	6.5	4 x 2.5	Consult our Sales Department																
1250	F	6.5	4 x 2.5	Consult our Sales Department																
1500	F	6.5	4 x 2.5	Consult our Sales Department																
2000	F	7	4 x 2.5	Consult our Sales Department																
2500	F	7	4 x 2.5	Consult our Sales Department																
3000	F	7.5	4 x 2.5	Consult our Sales Department																
3750	F	8	4 x 2.5	Consult our Sales Department																

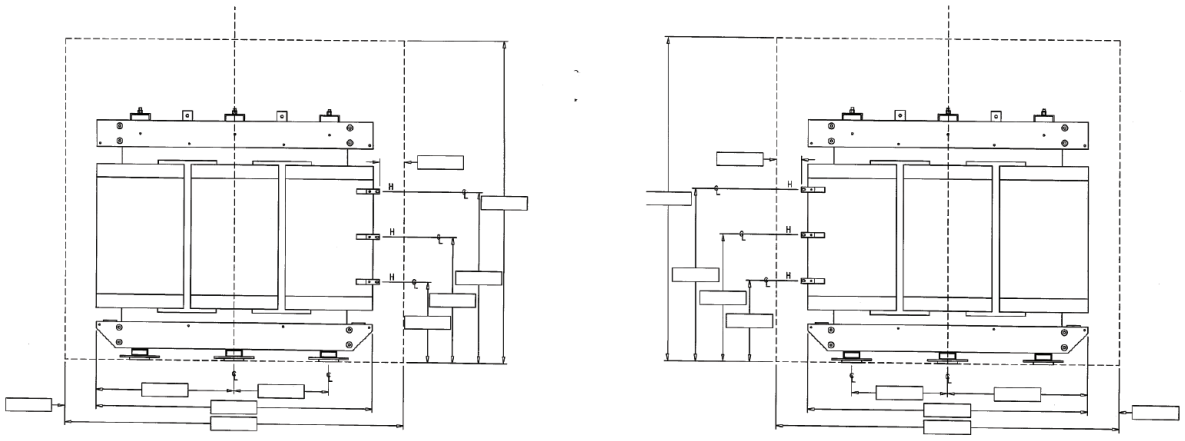
(1) W = Wall mount F = Floor mount
(2) Taps:
(3) Not applicable to Type 2, 3R and 4 enclosure.
All weights and dimensions are subject to change without notice.



POWER TRANSFORMERS E.V.I.

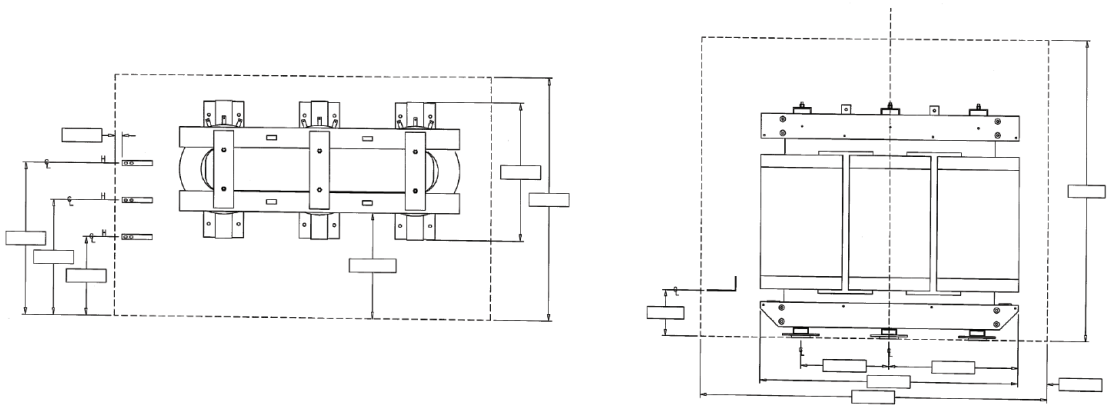
Arrangement layout with busbar coordination - for all types of installation

Figure 1



FRONT VIEW FRONT VIEW

Figure 2

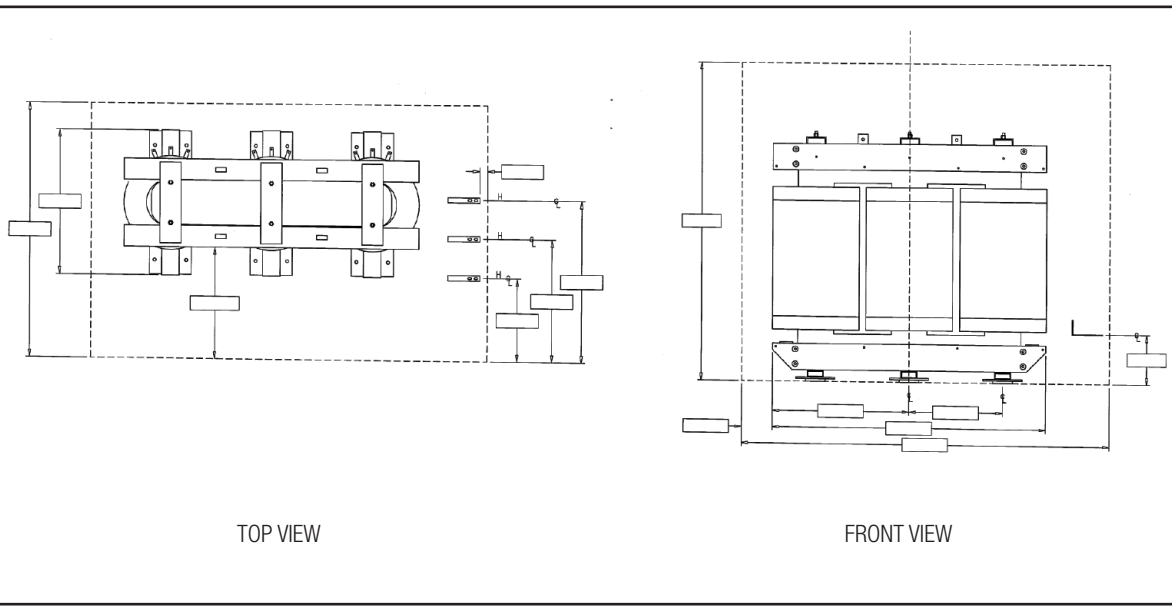


TOP VIEW FRONT VIEW

POWER TRANSFORMERS E.V.I.

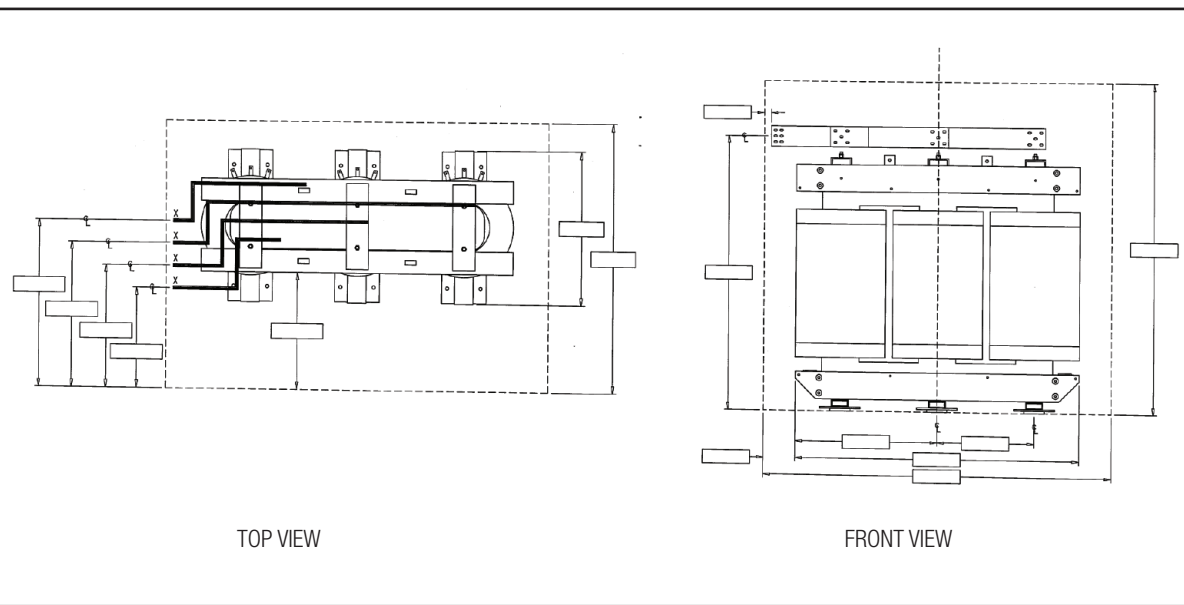
Arrangement layout with busbar coordination - for all types of installation

Figure 3



TOP VIEW FRONT VIEW

Figure 4

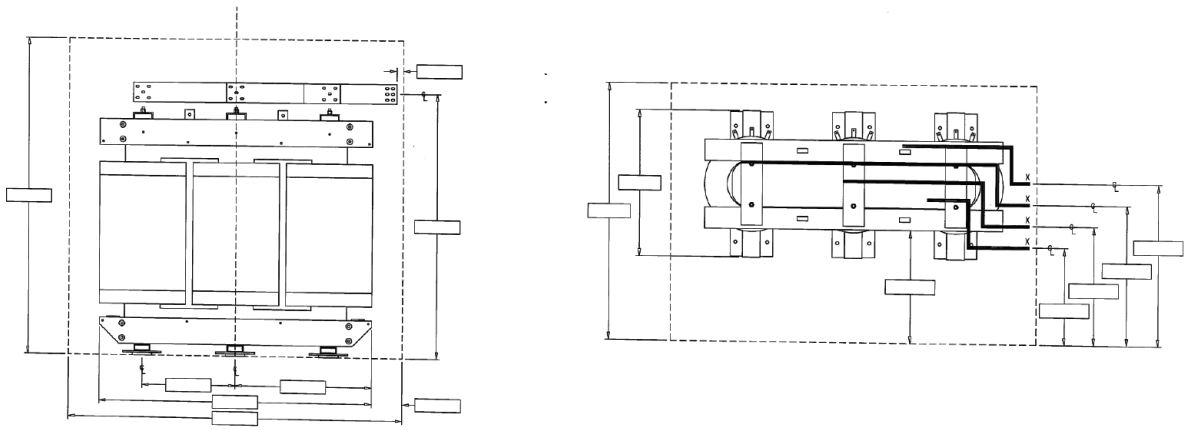


TOP VIEW FRONT VIEW

POWER TRANSFORMERS E.V.I.

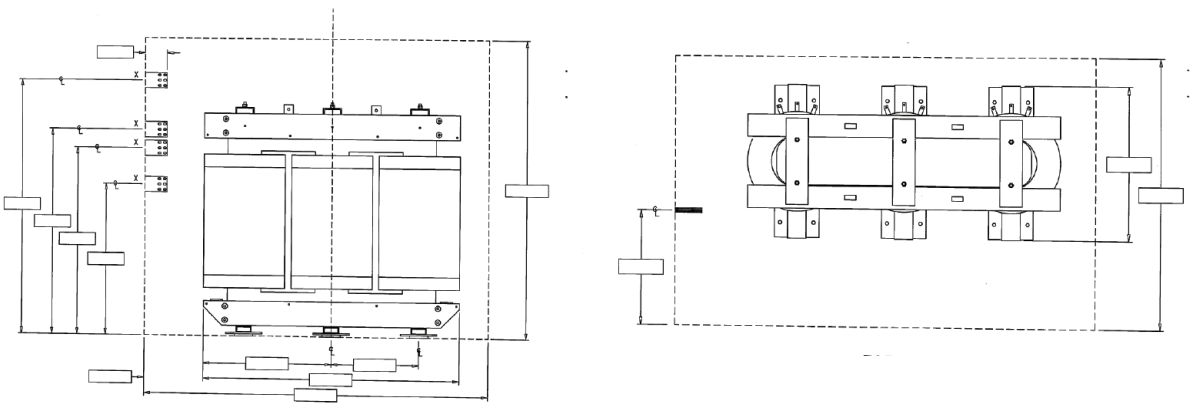
Arrangement layout with busbar coordination - for all types of installation

Figure 5



FRONT VIEW TOP VIEW

Figure 6

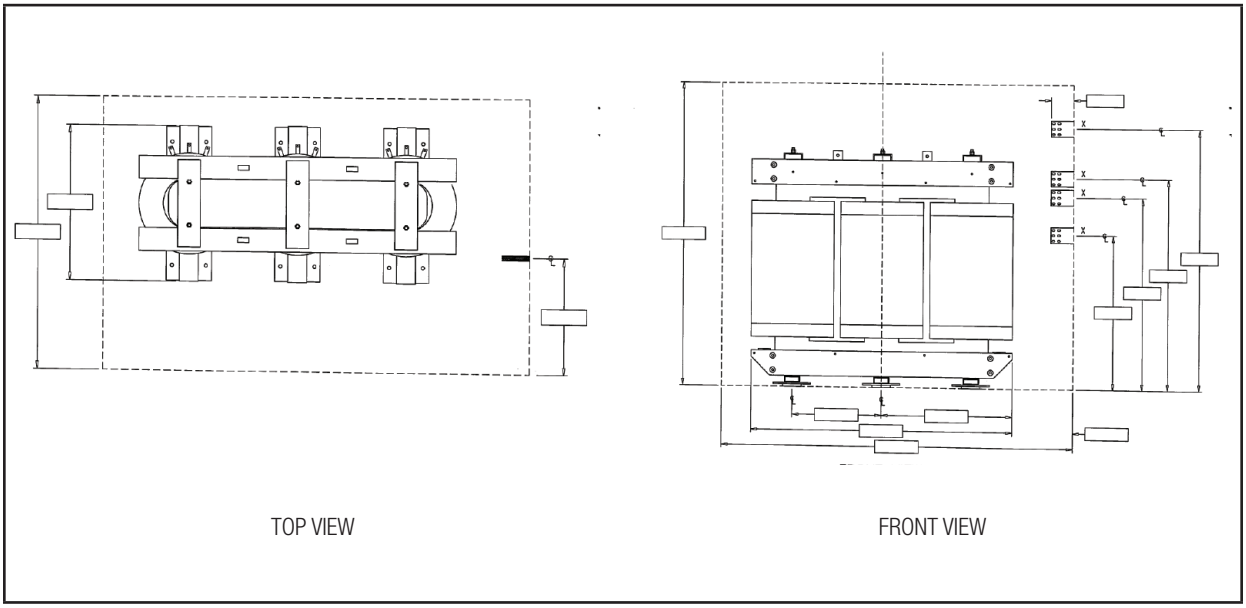


FRONT VIEW TOP VIEW

POWER TRANSFORMERS E.V.I.

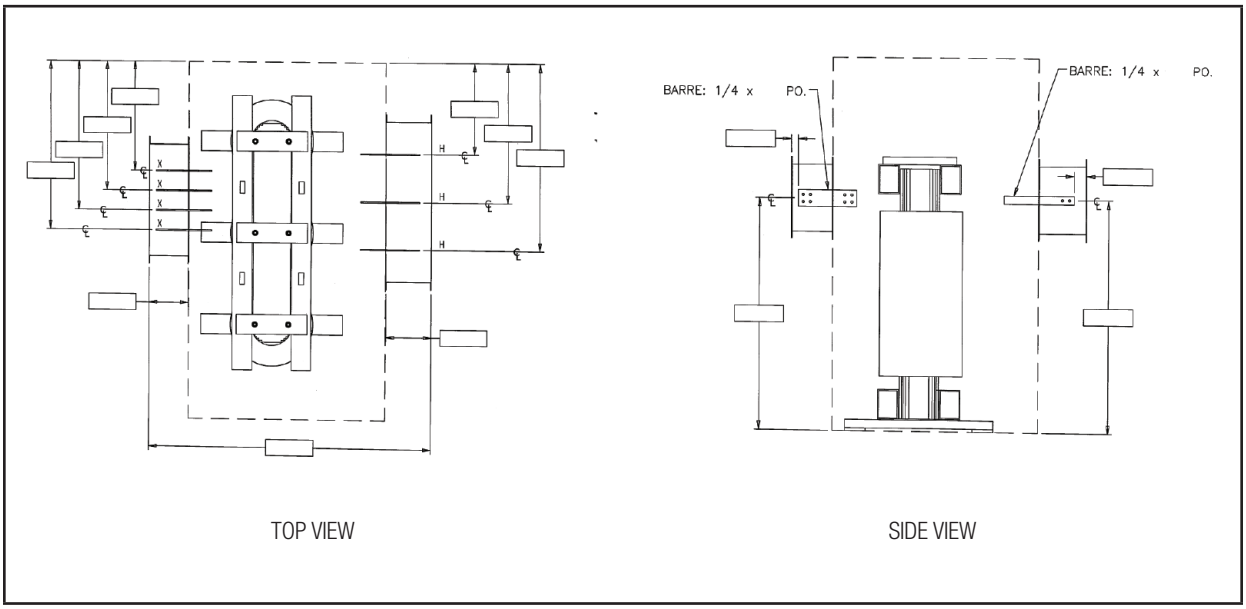
Arrangement layout with busbar coordination - for all types of installation

Figure 7



TOP VIEW FRONT VIEW

Figure 8

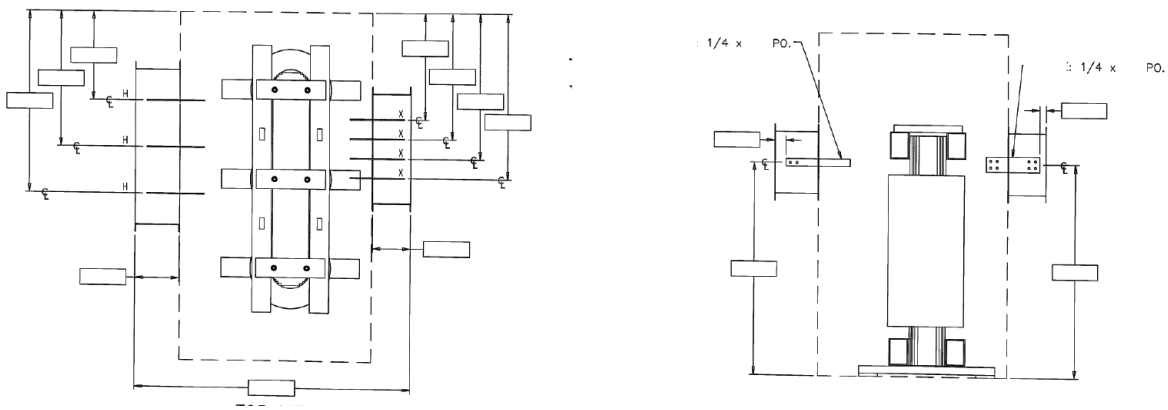


TOP VIEW SIDE VIEW

POWER TRANSFORMERS E.V.I.

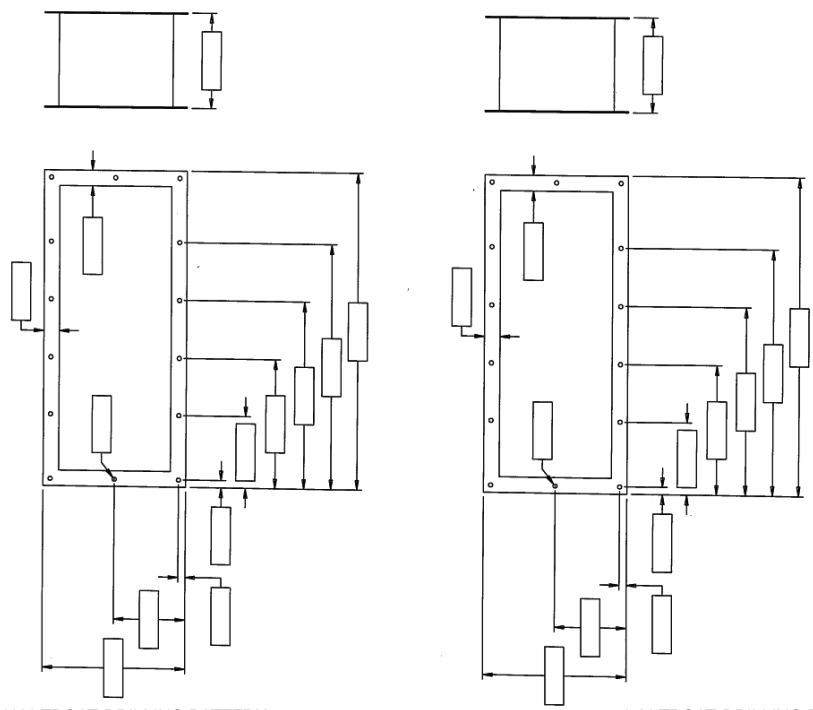
Arrangement layout with busbar coordination - for all types of installation

Figure 9



TOP VIEW SIDE VIEW

Figure 10



H.V. TROAT DRILLING PATTERN L.V. TROAT DRILLING PATTERN

EPOXY-POTTED TRANSFORMERS

Industrial Delta Epoxy Potted

Features and benefits

Accessories

Commercial Delta Epoxy Potted

Features and benefit

Accessories

SECTION 4

EPOXY-POTTED TRANSFORMERS

Series **PESC, PECT, BEAS** and **BEAT**

The solution to Extreme Applications

Delta Epoxy-Potted Transformers

Delta transformers are manufactured to the most exacting standards.

These epoxy-potted transformers provide excellent protection against dusty, damp, humid or corrosive environments. This enhanced protection is obtained through the use of epoxy resins and materials cured and hardened to form a protective coating around the core and the winding.

Features :

- 3 - 50 KVA - single-phase
- 3 - 75 KVA - three-phase
- 600 V or 480 V primary
- 3R and sprinkler proof enclosure suitable for outdoor applications
- Copper winding PECS & PECT
- Aluminum winding BEAS & BEAT
- Easy-to-install
- Wall mounting up to 50 KVA, single-phase and 30 KVA, three-phases
- Floor mounting 45 and 75 KVA, three-phases
- Sturdy and reliable
- Insulation class 185
- 115°C temperature rise
- Not regulated by C80c or NRCAN 2018 standards

EPOXY-POTTED TRANSFORMERS

Single-phase Industrial Series PECT

Not regulated by C802 or NRCAN 2018 standards

Copper Series PECS, Single phase Type 3R, Primary 600 V or 480V, 115° C

kVA	Mounting (1)	Case Style	Catalog number (2)	Dimensions (3)						Weight	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
3	W	CS4	PECS003**BLP	12	305	7	179	7	179	52	24
5	W	CS5	PECS005**BLP	18	457	10	254	8	203	114	52
7.5	W	CS5	PECS007**BLP	18	457	10	254	8	203	129	59
10	W	CS6	PECS010**BLP	21	533	13	330	10	254	197	89
15	W	CS6	PECS015**BLP	21	533	13	330	10	254	234	106
25	W	CS7	PECS025**BLP	22	559	15	381	11	279	285	129
37.5	F	CS8	PECS037**BLP	28	711	15	381	11	279	454	206

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE PHASE: *3 - 9 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
15 - 75 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

(3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

Standard Voltage

***(VK) 600-120/240 **(RK) 480-120/240*

Copper Series PECS, Single phase Type 3R, Primary 240 x 480 - 120/240, 115° C

kVA	Mounting (1)	Case Style	Catalog number (2)	Dimensions (3)						Weith	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
3	W	CS4	PECS003RKBMP	12	305	7	179	7	179	62	28
5	W	CS5	PECS005RKBMP	18	457	10	254	8	203	131	59
7.5	W	CS5	PECS007RKBMP	18	457	10	254	8	203	155	70
10	W	CS6	PECS010RKBMP	21	533	13	330	10	254	220	100
15	W	CS6	PECS015RKBMP	21	533	13	330	10	254	248	112
25	W	CS7	PECS025RKBMP	22	559	15	381	11	279	345	156
37.5	W	CS8	PECS037RKBMP	28	711	15	381	11	279	476	216

(1) W = Wall mount F = Floor mount
(2) Catalog number

SINGLE PHAES : *3 - 9 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
15 - 75 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

(3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

SINGLE-PHASE ENCLOSURE DRAWING & DIMENSIONS

Figure 1

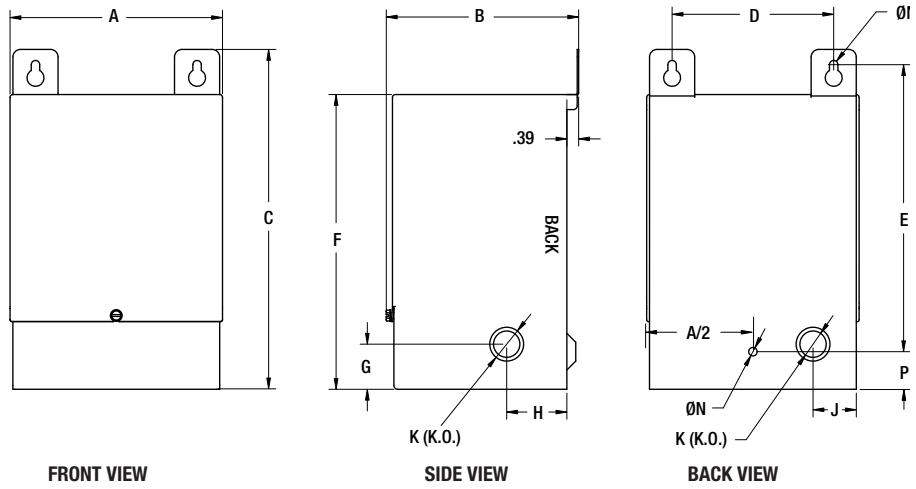
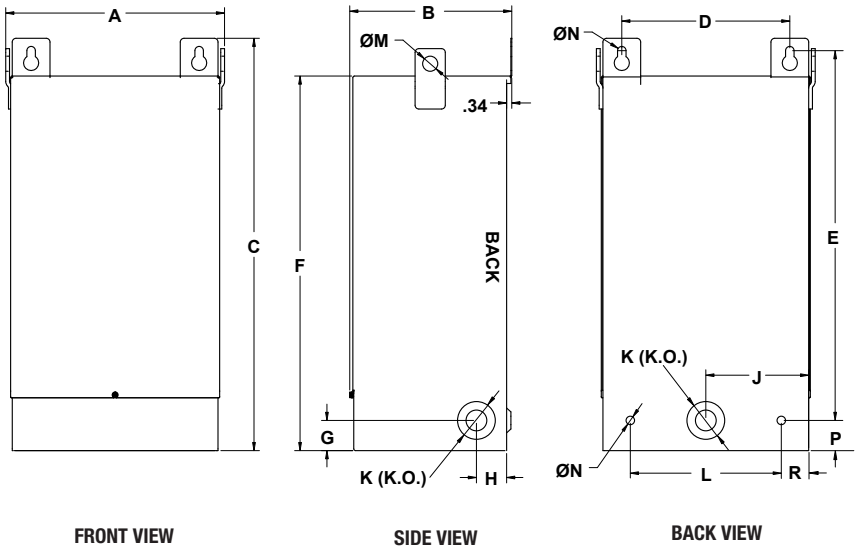


Figure 2



Case Style	Fig #	A	B	C	D	E	F	G	H	J	K[1]	L	M	N	P	R
CS3	1	5.88	5.50	10.50	4.13	8.25	9.00	1.50	2.00	1.25	0.88 x 1.13 x 1.38	--	--	0.28	1.25	--
CS4	1	7.00	6.50	11.75	5.38	9.50	10.25	1.75	2.00	1.50	0.88 x 1.13 x 1.38	--	--	0.28	1.25	--
CS5	2	10.00	7.75	17.25	7.38	15.38	15.25	2.375	2.00	4.00	1.13 x 1.38	6.00	0.75	0.44	1.25	1.68
CS6	2	12.25	9.25	20.88	9.38	18.13	18.88	2.00	2.00	5.00	1.38 x 2.50	8.00	0.75	0.44	2.00	1.68
CS7	2	14.50	10.75	21.38	11.63	18.63	19.38	2.00	2.00	6.00	1.38 x 2.50	10.00	0.75	0.44	2.00	1.81
CS8	2	14.50	10.75	27.38	11.13	24.50	24.88	2.00	2.00	6.00	1.38 x 2.50	10.00	0.75	0.56	2.00	1.81

[1] (K) Knockout sizes are actual diameters of knockout, not conduit sizes

All dimensions are in inches

EPOXY-POTTED TRANSFORMER

Three-phase - Industrial Series - **PECT** Series

Not regulated by C802 or NRCAN 2018 standards

Copper Series PECT, Three-phase Type 3R, Primary 600 V or 480 V, 115° C

kVA	Mounting (1)	Case Style	Catalog number (2)	Dimensions (3)						Weight	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
•3	W	CST3	PECT003**CBP	13	330	13	330	6	152	94	43
6	W	CST4	PECT006**BBP	17	432	16	406	7	179	146	66
9	W	CST5	PECT009**BBP	18	457	17	432	11	279	211	96
15	W	CST6	PECT015**BBP	18	457	20	508	11	279	340	154
30	W	CST7	PECT030**BBP	24	610	21	533	13	330	605	274
45	W	CST8	PECT045**BBP	29	737	22	559	13	330	770	349
75	F	CST9	PECT075**BBP	30	762	31	787	16	406	1350	612

(1) W = Wall mountr F = Floor mount
(2) Catalog number

THREE PHASE : *3 - 9 kVA* *1 x FCAN, 1 x FCBN 2 x 4.5%*
15 - 75 kVA *2 x FCAN, 2 x FCBN 4 x 2.5%*

3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

STANDARD VOLTAGE
**(VH) 600 - 120/208 **(RH) 480 - 120/208

• 80° C

THREE-PHASE ENCLOSURE DRAWINGS & DIMENSIONS

Figure 1

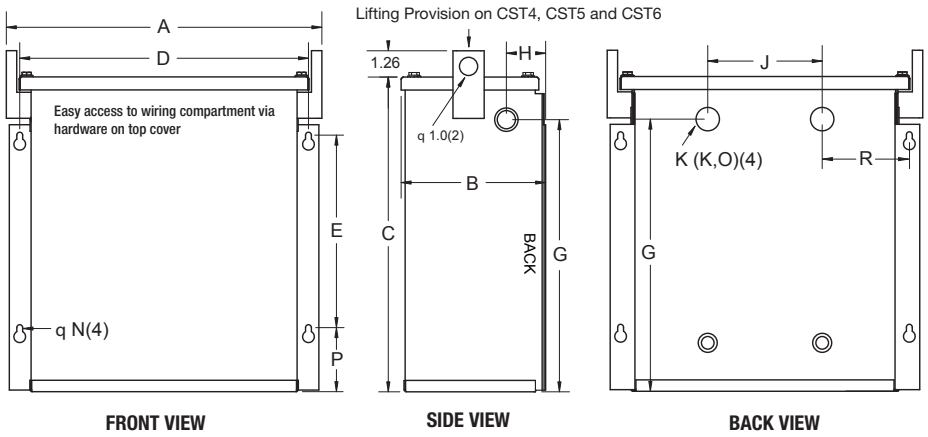
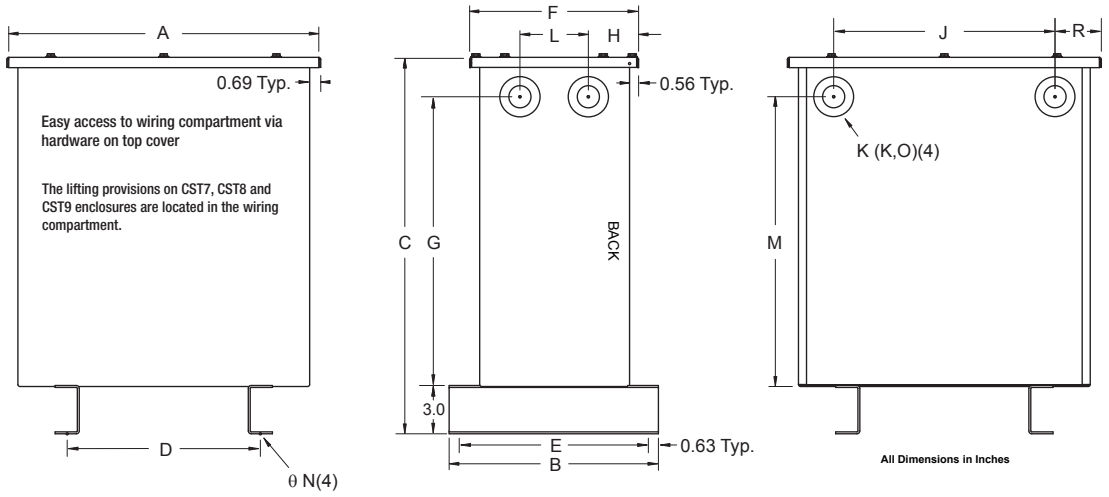


Figure 2



Case Style	Fig #	A	B	C	D	E	F	G	H	J	K[1]	L	M	N	P	R
CST3	1	12.38	5.44	11.13	11.38	6.50	-	9.50	2.38	5.50	0.88 x 1.13	-	-	0.28	1.81	3.44
CST4	1	15.19	6.94	15.13	13.88	9.25	-	13.56	1.88	5.50	0.88 x 1.13	-	-	0.28	3.06	4.19
CST5	1	16.63	10.25	16.63	14.50	8.25	-	13.88	2.69	10.00	1.38 x 1.75	-	-	0.41	4.50	2.25
CST6	1	19.25	10.44	16.63	17.50	8.25	-	13.56	2.69	12.50	1.38 x 2.50	-	-	0.41	4.50	2.50
CST7	2	20.25	13.00	23.38	12.00	11.75	11.38	17.94	2.50	13.75	1.38 x 2.50	4.25	17.94	0.56	-	2.13
CST8	2	22.25	13.00	28.38	14.00	11.75	11.38	21.94	2.50	15.75	1.38 x 2.50	4.25	21.94	0.56	-	2.13
CST9	2	31.25	16.00	29.88	18.00	14.75	14.13	23.94	2.75	22.75	2.00 x 3.00	6.50	23.64	0.56	-	3.13
CST9A	2	34.63	18.50	36.75	22.50	17.25	16.50	30.38	4.69	27.25	2.00 X 3.00	6.50	30.38	0.56	-	3.31
CST10	2	38.44	26.00	39.13	23.50	24.00	20.80	32.50	6.40	24.75	2.50 X 3.63	8.00	32.50	0.69	-	6.84
CST11	2	37.38	30.00	45.63	23.50	28.00	22.00	39.00	6.95	24.75	2.50 X 3.63	8.00	39.00	0.69	-	6.31
CSS10	2	21.88	18.50	31.00	13.50	17.25	16.50	24.63	4.91	13.13	1.75 x 2.50	6.50	24.63	0.56	-	4.00

[1] (K) Knockout sizes are actual diameters of knockout, not conduit sizes

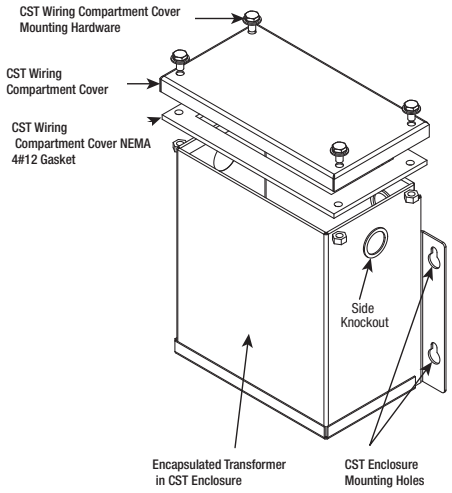
All dimensions are in inches

Options and Accessories

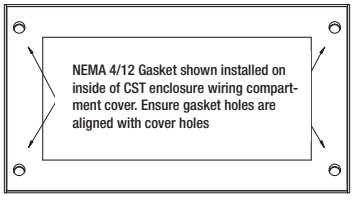
The following options and accessories are available on all standard and custom Three-Phase Industrial Series encapsulated hazardous location transformers.

OPTION NEMA 4/12 GASKET KITS

Previously ordered Three-Phase Delta Industrial series encapsulated transformers in standard NEMA 3R rated CST enclosures can easily be converted to a NEMA 4 or 12 rating by ordering and installing the appropriate gasket as listed in the table below.



Enclosure Case Style	Gasket Kit
CST3	CST3GK
CST4	CST4GK
CST5	CST5GK
CST6	CST6GK
CST7	CST7GK
CST8	CST8GK
CST9	CST9GK
CST10	CST10GK
CST11	CST11GK



Optional Stainless Steel Enclosure

Optional NEMA 4 rated CST stainless steel enclosures are identical to the standard steel enclosure designs, but are designed using Type 316 stainless steel in accordance with ANSI, NEMA, UL and ABS requirements for indoor, outdoor and marine duty applications. If your application calls for a Delta Industrial Series unit in a stainless steel enclosure, just add the suffix “S” to the end of the standard Delta part number.

(exemple: **PECS003VKBLP** is a standard unit. For stainless steel change the part number is **PECS003VKBLP(S)**)

EPOXY POTTED TRANSFORMERS

COMMERCIAL SERIES Single-phase - BEAS Series

Not regulated by C802 or NRCAN 2018 Standards

Aluminum BEAS Series, Single-phase Type 3R, Primary 600 V 120/240, 135° C

kVA	Mounting (1)	Case Style	Catalog Number (2)	Dimensions (3)						Weight	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
3	W	CS4	BEAS003VKGLP	12	305	7	179	1	179	55	25
5	W	CS5	BEAS005VKGLP	18	457	10	254	8	203	96	44
7.5	W	CS6A	BEAS007VKGLP	18	457	13	330	10	254	148	67
10	W	CS6	BEAS010VKGLP	21	533	13	330	10	254	179	81
••15	W	CS7	BEAS015VKJLP	22	559	15	381	11	279	265	120
••25	W	CS8	BEAS025VKJLP	28	711	15	381	11	279	385	175
••37.5	**W/*F**	CDS10	BEAS037VKJLP	31	787	22	559	19	483	598	271

(1) W = Wall mount F = Floor mount
(2) Catalog number
***Wall mounting kit require refer to page (Enclosure Drawing & Dimensions (2))**
SINGLE-PHASE : 3 - 10 kVA 1 x FCAN, 1 x FCBN 2 x 4.5%
15 - 37.5 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

•• 120° C

Aluminum BEAS Series, Single-phase Type 3R, Primary 240 X 480 120/240 V, 135° C

kVA	Mounting (1)	Case Style	Catalog Number (2)	Dimensions (3)						Weight	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
3	W	CS4	BEAS003RKGMP	12	305	7	179	7	179	55	25
5	W	CS5	BEAS005RKGMP	18	457	10	254	8	203	96	44
7.5	W	CS6A	BEAS007RKGMP	18	457	13	330	10	254	148	67
10	W	CS6	BEAS010RKGMP	21	533	13	330	10	254	179	81
••15	W	CS7	BEAS015RKJMP	22	559	15	381	11	279	265	120
••25	W	CS8	BEAS025RKJMP	28	711	15	381	11	279	385	175
••37.5	**W/*F**	CSS10	BEAS037RKJMP	31	787	22	559	19	483	598	271

(1) W = Wall mount F = Floor mount
(2) Catalog number
***Wall mounting kit require refer to page (Enclosure Drawing & Dimensions (2))**
SINGLE-PHASE : 3 - 10 kVA 1 x FCAN, 1 x FCBN 2 x 4.5%
15 - 75 kVA 2 x FCAN, 2 x FCBN 4 x 2.5%
3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

•• 120° C

EPOXY POTTED TRANSFORMERS

COMMERCIAL SERIES Three-phase - BEAT Series

Not regulated by C802 or NRCAN 2018 Standards

Aluminum BEAT Series, Three-phase Type 3R, Primary 600 V or 480 V, 135° C

kVA	Mounting (1)	Case Style	Catalog Number (2)	Dimensions (3)						Weight	
				Height		Width		Depth			
				In	mm	In	mm	In	mm	lb	kg
•3	W	CST3	BEAT003**CBP	12	305	13	330	6	152	70	32
6	W	CST5	BEAT006**GBP	17	432	17	432	11	254	140	64
9	W	CST6	BEAT009**GBP	17	432	20	508	11	254	210	95
••15	**W/*F**	CST7	BEAT015**JBP	24	610	21	533	13	330	350	159
••30	**W/*F**	CST8	BEAT030**JBP	29	737	22	559	13	330	525	238
••45	**W/*F**	CST9	BEAT045**JBP	30	762	31	787	16	406	700	318
••75	**F**	CST9A	BEAT075**JBP	37	940	35	889	19	483	1420	644

(1) W = Wall mount F = Floor mount
(2) Catalog number
***Wall mounting kit require refer to page (Enclosure Drawing & Dimensions (2))**

THREE-PHASE: *3 - 9 kVA* *1 x FCAN, 1 x FCBN* *2 x 4.5%*
15 - 75 kVA *2 x FCAN, 2 x FCBN* *4 x 2.5%*

TENSION STANDARD
**(VH) 600 - 120/208 **(RH) 480 - 120/208

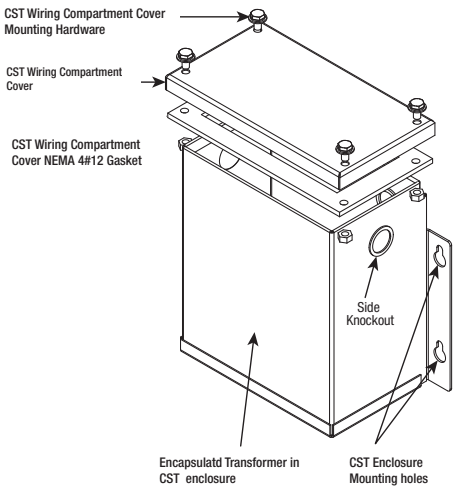
3) The dimensions are applicable for type 3R enclosure only.
All weights and dimensions are approximate and subject to change without notice.
For the electrical schematic diagrams see Section 7, page 20

• 80° C
•• 120° C

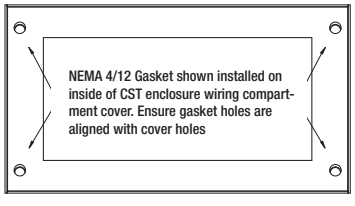
OPTIONAL: NEMA 4/12

GASKET KITS

Three-phase Delta encapsulated transformers in standard NEMA 3R rated CST enclosures can easily be converted to a NEMA 4 or 12 rating by ordering and installing the appropriate optional gasket kit as listed in the table below.



Enclosure Case Style	Gasket kit P/N
CST3	CST3GK
CST4	CST4GK
CST5	CST5GK
CST6	CST6GK
CST7	CST7GK
CST8	CST8GK
CST9	CST9GK
CST9A	CST9AGK



ENCLOSURE DRAWING & DIMENSIONS

Figure 1

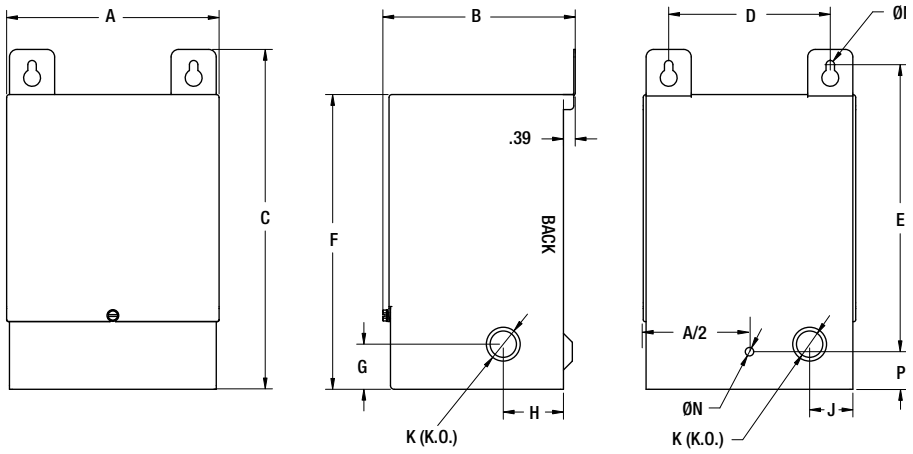
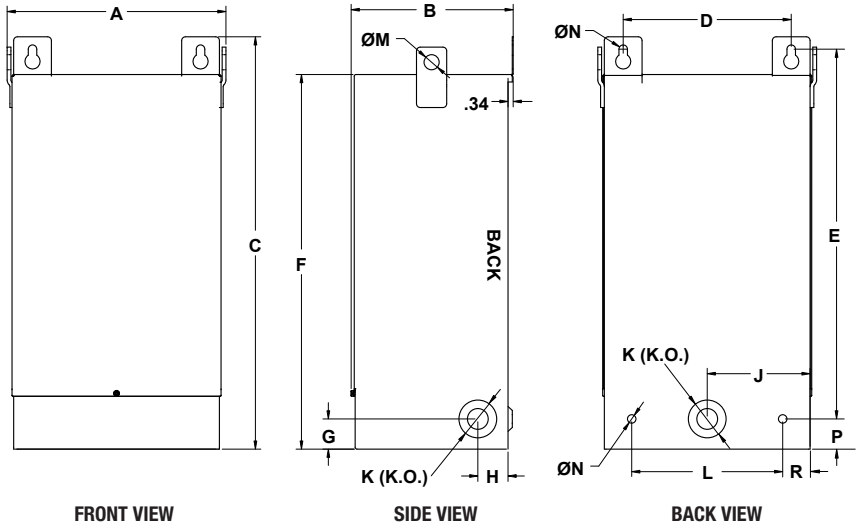


Figure 2



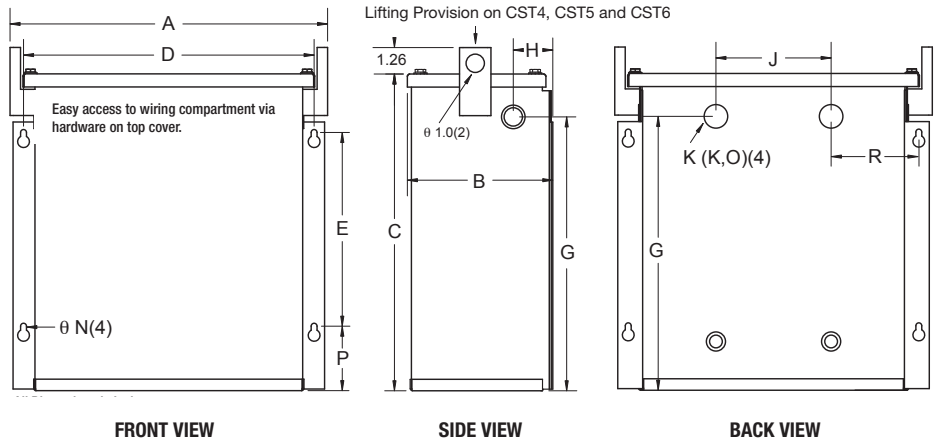
Case stye	Fig #	A	B	C	D	E	F	G	H	J	K[1]	L	M	N	P	R
CS4	1	7.00	6.50	11.75	5.38	9.50	10.25	1.75	2.00	1.50	0.88 x 1.13 x 1.38	--	--	0.28	1.25	--
CS5	2	10.00	7.75	17.25	7.38	15.38	15.25	2.375	2.00	4.00	1.13 x 1.38	6.00	0.75	0.44	1.25	1.68
CS6A	2	12.25	9.25	17.63	9.38	14.88	15.56	2.00	2.00	5.00	1.38 x 2.50	8.00	0.75	0.44	2.00	1.68
CS6	2	12.25	9.25	20.88	9.38	18.13	18.88	2.00	2.00	5.00	1.38 x 2.50	8.00	0.75	0.44	2.00	1.68
CS7	2	14.50	10.75	21.38	11.63	18.63	19.38	2.00	2.00	6.00	1.38 x 2.50	10.00	0.75	0.44	2.00	1.81
CS8	2	14.50	10.75	27.38	11.13	24.50	24.88	2.00	2.00	6.00	1.38 x 2.50	10.00	0.75	0.56	2.00	1.81

[1] (K) Knockout sizes are actual diameters of knockout, not conduit sizes

All dimension are in inches

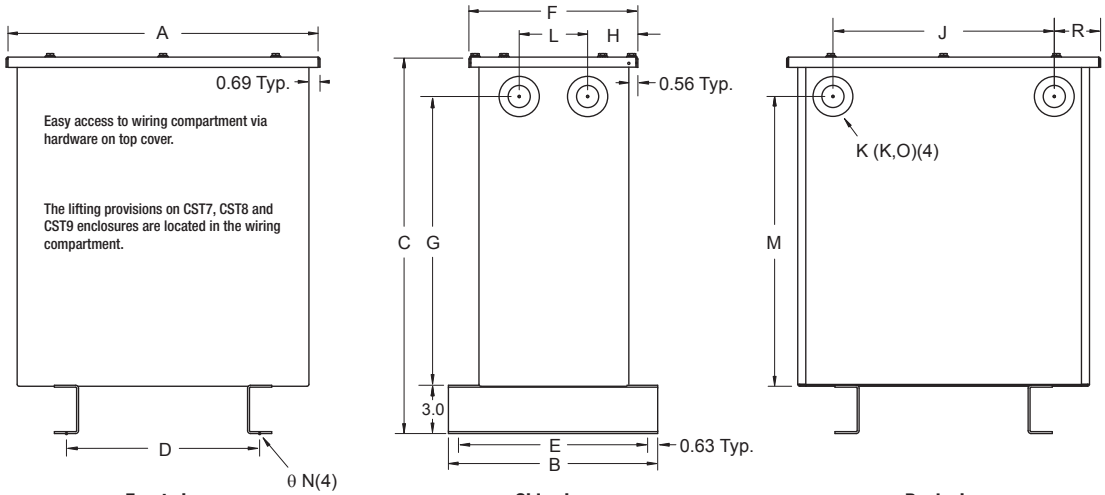
ENCLOSURE DRAWING & DIMENSIONS (2)

Figure 1



FRONT VIEW SIDE VIEW BACK VIEW

Figure 2



Front view Side view Back view

Case Style	Fig #	A	B	C	D	E	F	G	H	J	K[1]	L	M	N	P	R
CST3	1	12.38	5.44	11.13	11.38	6.50	-	9.50	2.38	5.50	0.88 x 1.13	-	-	0.28	1.81	3.44
CST4	1	15.19	6.94	15.13	13.88	9.25	-	13.56	1.88	5.50	0.88 x 1.13	-	-	0.28	3.06	4.19
CST5	1	16.63	10.25	16.63	14.50	8.25	-	13.88	2.69	10.00	1.38 x 1.75	-	-	0.41	4.50	2.25
CST6	1	19.25	10.44	16.63	17.50	8.25	-	13.56	2.69	12.50	1.38 x 2.50	-	-	0.41	4.50	2.50
CST7	2	20.25	13.00	23.38	12.00	11.75	11.38	17.94	2.50	13.75	1.38 x 2.50	4.25	17.94	0.56	-	2.13
CST8	2	22.25	13.00	28.38	14.00	11.75	11.38	21.94	2.50	15.75	1.38 x 2.50	4.25	21.94	0.56	-	2.13
CST9	2	31.25	16.00	29.88	18.00	14.75	14.13	23.94	2.75	22.75	2.00 x 3.00	6.50	23.64	0.56	-	3.13
CST9A	2	34.63	18.50	36.75	22.50	17.25	16.50	30.38	4.69	27.25	2.00 X 3.00	6.50	30.38	0.56	-	3.31
CST10	2	38.44	26.00	39.13	23.50	24.00	20.80	32.50	6.40	24.75	2.50 X 3.63	8.00	32.50	0.69	-	6.84
CST11	2	37.38	30.00	45.63	23.50	28.00	22.00	39.00	6.95	24.75	2.50 X 3.63	8.00	39.00	0.69	-	6.31
CSS10	2	21.88	18.50	31.00	13.50	17.25	16.50	24.63	4.91	13.13	1.75 x 2.50	6.50	24.63	0.56	-	4.00

[1] (K) Knockout sizes are actual diameters of knockout, not conduit sizes

All dimension are in inches

ORION AND ATRIA CONTROL TRANSFORMERS

ORION CONTROL TRANSFORMERS

Features and Benefits

- Molded terminal blocks for primary and secondary connections up to 3,000VA and 30Amps. Coil face termination over 3,000VA and 30Amps.
- All terminal blocks utilize a combination slot/Phillips # 6 screw with a SEMS washer. Coil face terminations utilize a ¼-20 UNC x 0,50" combination slot/Phillips screw and a spring lock washer.
- 50/60 Hz (60 Hz on UH*** and QC***).
- Copper wound coils with high dielectric strength insulation.
- CSA Certified (file LR 3902), UL listed with (file E50394), CE marked and RoHS Compliant.
- Meets NEMA standards.

Superior insulation materials. The Delta Orion Controls offers the following insulation systems:

- Up to 1,500VA: 80ºC rise
- 130ºC temperature class (B)
- 2,000 to 5,000VA: 115ºC
- 180ºC temperature class (F)
- Most Delta Orion Controls units incorporate "Premium Packaging" which feature:
  - Premium fluted cartons
  - Custom molded foam inserts
  - Easy removal and repacking
  - Industry's best box label

- All Delta Orion Controls units are supplied with trilingual installation and wiring instruction sheets.
- All units supplied with primary and secondary voltage links/jumpers.
- All Delta Orion Controls transformers are Vacuum Impregnated with polyester resin and oven cured.
- Bolted core construction.
- Bolt-on mounting brackets.

15 YEARS WARRANTY

CONTROL TRANSFORMERS

ORION

ORION Series-A, 60 Hertz

Primary voltage simple: 600/480V ll 575/460 ll 550/440

Secondary voltage double: 120x240V ll 115x230 ll 110x220

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050UH	A	0,42/0,21	2,60	3,82	2,60	2,13	2,64	0,22 x 0,44	2,98	2,79	2,2
100	100	DC0100UH	A	0,83/0,42	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3,3
150	150	DC0150UH	A	1,25/0,63	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,4
250	160	DC0250UH	A	2,08/1,04	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,4
350	250	DC0350UH	A	2,92/1,04	3,78	4,49	3,40	3,31	3,39	0,22 x 0,44	3,78	3,59	7,5
500	300	DC0500UH	A	4,17/2,08	4,49	4,69	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11
750	500	DC0750UH	A	6,25/3,13	5,25	5,08[1]	4,37	4,50	4,06	0,31 x 0,81	4,75	4,56	18
1000	650	DC01000UH	A	8,33/4,17	5,25	5,47[1]	4,37	4,50	4,45	0,31 x 0,81	4,75	4,56	21
1500	1000	DC01500UH	A	12,5/6,25	5,25	6,85[1]	4,37	4,50	5,83	0,31 x 0,81	4,56	4,37	28
2000	1300	DC02000UH	A	16,7/8,33	6,38	5,87[1]	5,31	5,75	4,84	0,31 x 0,81	5,69	5,50	34
3000	2000	DC03000UH	A	25,0/12,5	7,50	7,50	6,50	6,30	6,85	0,44 x 1,00	6,50	6,50	60
5000	3000	DC05000UH	C	40,7/20,8	8,98	9,88	7,76	7,40	7,13	0,44 x 1,00	N/D	N/D	93

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
[1] *Note: For 750 to 2 000 VA units actual overall depts 0.24 in plus the value in column B.*
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

Orion Series-B, 60 Hertz

Primary voltage simple: 600 ll 575 ll 550

Secondary voltage double: 12x24 ll 11.5x23 ll 11x22

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050QC	A	4,17/2,08	2,60	3,83	2,60	2,13	2,05	0,22 x 0,44	2,98	2,79	1,5
100	100	DC0100QC	A	8,33/4,17	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3,3
150	150	DC0150QC	A	12,5/6,25	2,99	4,09	2,85	2,52	2,95	0,22 x 0,44	3,23	3,04	3,0
250	160	DC0250QC	A	20,8/10,4	3,78	3,70	3,40	3,31	2,60	0,22 x 0,44	3,78	3,59	5,2
350	250	DC0350QC	A	29,2/14,6	3,78	4,29	3,40	3,31	3,19	0,22 x 0,44	3,78	3,59	7,1
500	300	DC0500QC	B	41,7/20,8	4,49	5,08	3,78	3,78	3,27	0,31 x 0,81	4,16	3,97	9,9

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

CONTROL TRANSFORMERS

ORION

Orion Series-C, 50/60 Hertz

Primary voltage double: 240x480 ll 230x460 ll 220x440

Secondary voltage double: 120x240V ll 115x230 ll 110x220

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050PH	A	0,42/0,21	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,7
100	100	DC0100PH	A	0,83/0,42	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3
150	150	DC0150PH	A	1,25/0,63	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,3
250	160	DC0250PH	A	2,08/1,04	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,5
350	250	DC0350PH	A	2,92/1,46	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,2
500	300	DC0500PH	A	4,17/2,08	4,49	4,69	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11
750	500	DC0750PH	A	6,25/3,13	5,25	4,69[1]	4,37	4,50	3,66	0,31 x 0,81	4,75	4,56	16
1000	650	DC01000PH	A	8,33/4,17	5,25	5,47[1]	4,37	4,50	4,45	0,31 x 0,81	4,75	4,56	21
1500	1000	DC01500PH	A	12,5/6,25	5,25	6,85[1]	4,37	4,50	5,83	0,31 x 0,81	4,75	4,56	28
2000	1300	DC02000PH	A	16,7/8,33	6,38	5,87[1]	5,31	5,75	4,84	0,31 x 0,81	5,50	5,31	35
3000	2000	DC03000PH	A	25,0/12,5	7,50	7,50	6,50	6,30	7,28	0,44 x 1,00	6,50	6,50	64
5000	3000	DC05000PH	C	41,7/20,8	8,98	9,88	7,76	7,40	7,28	0,44 x 1,00	N/D	N/D	97

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
[1] *Note: For 750 to 2 000 VA units actual overall depts 0.24 in plus the value in column B.*
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

Orion Series-D, 50/60 Hertz

Primary voltage double: 240x480 ll 230x460 ll 220x440

Secondary voltage double: 12x24 ll 11.5x23 ll 11x22

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050PC	A	4,17/2,08	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,7
100	100	DC0100PC	A	8,33/4,17	2,99	3,54	2,85	2,52	2,40	0,22 x 0,44	3,23	3,04	3
150	150	DC0150PC	A	12,5/6,25	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,3
250	160	DC0250PC	A	20,8/10,4	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,5
350	250	DC0350PC	A	29,2/14,6	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,3
500	300	DC0500PC	B	41,7/20,8	4,49	5,47	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

CONTROL TRANSFORMERS

ORION

Orion SERIES-E, 50/60 Hertz

Primary voltage simple: 380 /347

Secondary voltage double: 120x240

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050LH	A	0,42/0,21	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,7
100	100	DC0100LH	A	0,83/0,42	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3,4
150	150	DC0150LH	A	1,25/0,63	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,4
250	160	DC0250LH	A	2,08/1,04	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,7
350	250	DC0350LH	A	2,92/1,04	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,4
500	300	DC0500LH	A	4,17/2,08	4,49	4,69	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	12
750	500	DC0750LH	A	6,25/3,13	5,25	4,69[1]	4,37	4,50	3,66	0,31 x 0,81	4,75	4,56	17
1000	650	DC01000LH	A	8,33/4,17	5,25	5,47[1]	4,37	4,50	4,45	0,31 x 0,81	4,75	4,56	21
1500	1000	DC01500LH	A	12,5/6,25	6,38	4,88[1]	5,31	5,75	3,86	0,31 x 0,81	5,50	5,31	29

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
[1] *Note: For 750 to 2 000 VA units actual overall depts 0.24 in plus the value in column B.*
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

Orion SERIES-F, 50/60 Hertz

Primary voltage simple: 380/347

Secondary voltage double: 12x24

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050LC	A	4,17/2,08	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,7
100	100	DC0100LC	A	8,33/4,17	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3,3
150	150	DC0150LC	A	12,5/6,25	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,4
250	160	DC0250LC	A	20,8/10,4	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,4
350	250	DC0350LC	A	29,2/14,6	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,1
500	300	DC0500LC	B	41,7/20,8	4,49	5,47	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kgg

CONTROL TRANSFORMERS

ORION

Orion SERIES-G, 50/60 Hertz

Primary voltage simple: 277

Secondary voltag simple: 120

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050IE	A	0,42	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,6
100	100	DC0100IE	A	0,83	2,99	3,54	2,85	2,52	2,40	0,22 x 0,44	3,23	3,04	3,2
150	150	DC0150IE	A	1,25	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,3
250	160	DC0250IE	A	2,08	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,4
350	250	DC0350IE	A	2,92	3,78	4,49	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,1
500	300	DC0500IE	A	4,17	4,49	4,69	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11
750	500	DC0750IE	A	6,25	5,25	5,08[1]	4,37	4,50	4,06	0,31 x 0,81	4,75	4,56	18
1000	650	DC01000IE	A	8,33	5,25	5,47[1]	4,37	4,50	4,45	0,31 x 0,81	4,75	4,56	20
1500	1000	DC01500IE	A	12,50	5,25	6,85[1]	4,37	4,50	5,83	0,31 x 0,81	4,75	4,56	29

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
[1] *Note: For 750 to 2 000 VA units actual overall depts 0.24 in plus the value in column B.*
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

Orion SERIES-H, 50/60 Hertz

Primary voltage double: 120x240 ǁ 115x230 ǁ 110x220

Secondary voltage double: 12x24 ǁ 11.5x23 ǁ 11x22

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050HC	A	4,17/2,08	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,7
100	100	DC0100HC	A	8,33/4,17	2,99	3,74	2,85	2,52	2,60	0,22 x 0,44	3,23	3,04	3
150	150	DC0150HC	A	12,5/6,25	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,3
250	160	DC0250HC	A	20,8/10,4	3,78	3,90	3,40	3,31	2,80	0,22 x 0,44	3,78	3,59	5,9
350	250	DC0350HC	A	29,2/14,6	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,2
500	300	DC0500HC	B	41,7/20,8	4,49	5,47	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

CONTROL TRANSFORMERS

ORION

Orion SERIES-I, 50/60 Hertz

Primary voltage double: 208x416 ll 200x400 ll 190x380

Secondary voltage: 120x240 ll 115x230 ll 110x220

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050NH	A	0,42/0,21	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	1,6	2,60	1,6
100	100	DC0100NH	A	0,83/0,42	2,99	3,54	2,85	2,52	2,40	0,22 x 0,44	3	2,85	3
150	150	DC0150NH	A	1,25/0,63	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	4,3	2,85	4,3
250	160	DC0250NH	A	2,08/1,04	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	6,5	3,40	6,5
350	250	DC0350NH	A	2,92/1,04	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	8,3	3,40	8,3
500	300	DC0500NH	A	4,17/2,08	4,49	4,69	3,78	3,78	3,66	0,31 x 0,81	11	3,78	11
750	500	DC0750NH	A	6,25/3,13	5,25	4,69[1]	4,37	4,50	3,66	0,31 x 0,81	16	4,75	16
1000	650	DC01000NH	A	8,33/4,17	5,25	5,47[1]	4,37	4,50	4,45	0,31 x 0,81	20	4,75	20
1500	1000	DC01500NH	A	12,5/6,25	6,38	4,88[1]	5,31	5,75	3,86	0,31 x 0,81	27	5,69	27

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
[1] *Note: For 750 to 2 000 VA units actual overall depts 0.24 in plus the value in column B.*
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kgkg

Orion SERIES-J, 50/60 Hertz

Primary voltage double: 208x416 ll 200x400 ll 190x380

Secondary voltage double: 12x24 ll 11.5x23 ll 11x22

VA Rating	CE VA Rting	Catalog number	MtG Fig.	Output Amps	Overall Dimensions			Mounting Centers		Mounting Slot	Height with Finger Guard	Height with Fue Block Adaptor	Approx. Shp Weight Lbs.
					*A	*B	*C	*D	*E	*G x *H	lb	kg	
50	50	DC050NC	A	4,17/2,08	2,60	3,35	2,60	2,13	2,17	0,22 x 0,44	2,98	2,79	1,6
100	100	DC0100NC	A	8,33/4,17	2,99	3,74	2,85	2,52	2,40	0,22 x 0,44	3,23	3,04	3,1
150	150	DC0150NC	A	12,5/6,25	2,99	4,29	2,85	2,52	3,15	0,22 x 0,44	3,23	3,04	4,3
250	160	DC0250NC	A	20,8/10,4	3,78	4,09	3,40	3,31	2,99	0,22 x 0,44	3,78	3,59	6,5
350	250	DC0350NC	A	29,2/14,6	3,78	4,69	3,40	3,31	3,58	0,22 x 0,44	3,78	3,59	8,3
500	300	DC0500NC	B	41,7/20,8	4,49	5,47	3,78	3,78	3,66	0,31 x 0,81	4,16	3,97	11

Primary and secondary voltage links/jumpers supplied standard with all transformers.
Special voltages and VA sizes available upon request.
** For dimensional drawing see page 5-9*
All dimensions are in inches 1 lb = 0,45kg

CONTROL TRANSFORMERS
ORION
Dimensional Drawing

Some actual transformer units may differ from dimensional drawing shown below.

Figure A

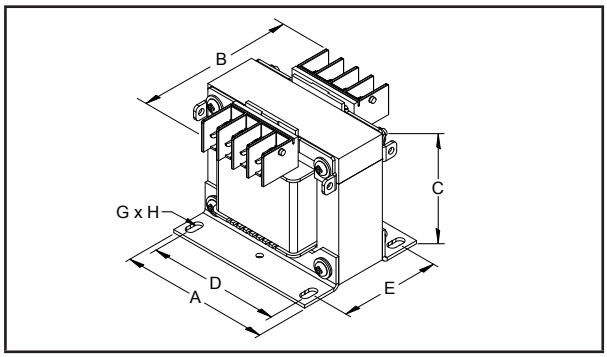


Figure B

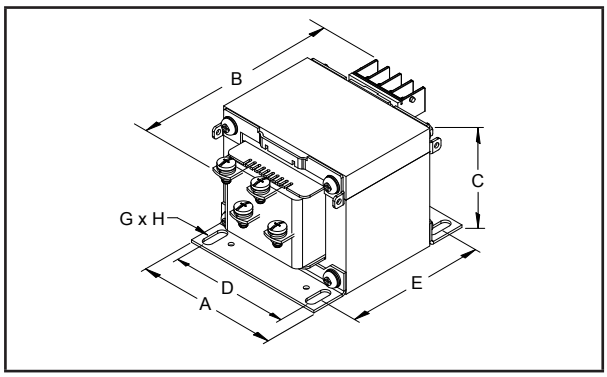
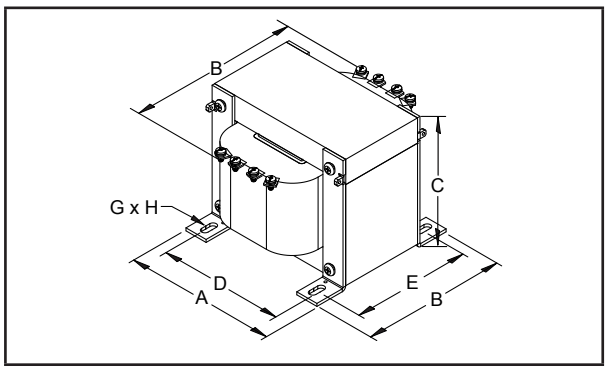


Figure C



Custom Control Capabilities

Delta is one of the industry's most technically capable manufacturers producting the broadest and most competitve range of custom dry-type transformers and related magnetic products in North America. Our designs are cost effective and our transformers are built with modern manufacturing techniques. We emphasize our Value Added Engineering whereby our design staff will interface with your team to produce the optimun transformer. Our 3-D modelling design and CAD facilities permits quick and effective communication when time is vital.

Delta can provide custom control transformers to fit your design style requirements for most standard or specialty applications. From custom medium voltage to enclosed or even potted control, Delta has the engineering and manufacturing resources to deliver your custom control transformer how you want it and when you need it.

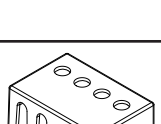
CONTROL TRANSFORMERS
ORION
Optional Accessories

Finger Guard

Delta Control Transformers up to and including 3,000VA or 30Amps are available with optional finger guards.

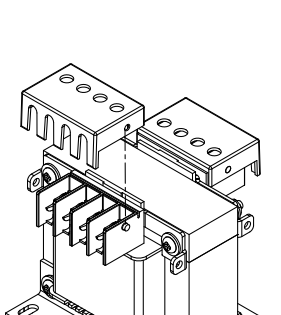
Part number	Applicable Transformer Part Number Suffic's	Applicable VA Sizes
FGO1	QC, PC, HC, LC, NC	50 to 500
FGO1	LH NH, IE	50 to 1,500
FGO1	UH, PH	50 to 3,000

Note: Each finger guard supplies either the primay or secondary side. Finger guard option not available on DCO5000UH and DCO5000PH standard units. Add 0.38 in per finger guard to overall depth (column B) on units from 50 to 500 VA and 0.31 in to units from 750 to 2,000VA when finger guard has been installed. For custom units, optional finger guards are not available on units up tp 3,000VA or 30Amps.



Finger Guard

(optional)



Sample Assembly Drawing For Optional Finger Guard Installation

(Only available for units supplied with either a primary or secondary molded terminal block)

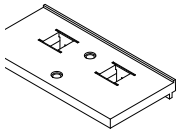
Fuse Block Adapter kit

Delta Control Transformers up to and including 3 000 VA or 30 Amps are available with optional fuse block adapter kits. The Fuse Block Adapter Kit is designed to allow for the installation of any third party after market fuse block asembly onto the industrial control transformer. The transformer must be a unit that incorporates a molded terminal block on either the primary or secondary side.

Note: Delta does not provide any jumpers or appropriate fuses for any after market fuse block you install on the Delta Control Transformers. The Delta Fuse Block Adapter kit provides only the mechanical means of attaching a third party after market fuse block. Delta does not recommend any specific fuse block or fuse supplier.

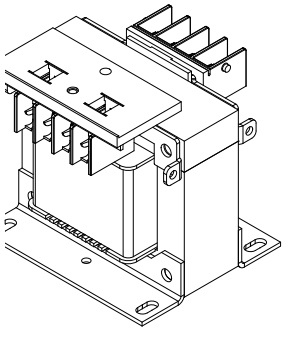
Part number	Applicable Transformer Part Number Suffic's	Applicable VA Sizes
FBOAK1	QC, PC, HC, LC, NC	50 to 500
FBOAK1	LH NH, IE	50 to 1,500
FBOAK1	UH, PH	50 to 3,000

Note: Only 1 fuse block adapter kit is required per transformer. Fuse block adapter kit not available on DCO5000UH and DCO5000PH standard units. Add 0.38 in per fuse block adapter to overall depth (column B) on units from 750 to 3,000 VA when optional fuse block adapter is installed. For custom units, optional fuse block adapter kit is only available on units up to 3,000VA or 30Amps.



Fuse Block Adapter Kit

(optional)



Sample Assembly Drawing For Optional Fuse Block Adapter Installation

ATRIA CONTROL TRANSFORMERS

Features and Benefits

- Molded terminal blocks for primary and secondary connections up to 3,000VA and 30Amps. Coil face termination over 3,000VA and 30Amps.
- All terminal blocks utilize a combination slot/Phillips # 6 screw with a SEMS washer. Coil face terminations utilize a ¼-20 UNC x 0.50" combination slot/Phillips screw and a spring lock washer.
- 50/60 Hz (60 Hz on UH*** and QC***).
- Copper wound coils with high dielectric strength insulation.
- CSA Certified (file LR 3902), UL listed with (file E50394), CE marked and RoHS Compliant.
- Meets NEMA standards.

Superior insulation materials. The Delta Atria General purpose enclosed transformers offers the following insulation systems :

- Up to 1,500VA: 80ºC rise
- 130ºC temperature class (B)
- 2,000 to 5,000VA: 115ºC
- 180ºC temperature class (F)
- Most Delta Atria General purpose enclosed transformers units incorporate "Premium Packaging" which feature:
  - Premium fluted cartons
  - Custom molded foam inserts
  - Easy removal and repacking
  - Industry's best box label

- All Delta Atria General purpose enclosed transformers units are supplied with trilingual installation and wiring instruction sheets.
- All units supplied with primary and secondary voltage links/jumpers.
- All Delta Atria General purpose enclosed transformers are Vacuum Impregnated with polyester resin and oven cured.
- Bolted core construction.
- Bolt-on mounting brackets.
- Type 1 enclosure only

15 YEARS WARRANTY

GENERAL PURPOSE ENCLOSED TRANSFORMER

ATRIA

Atria SERIES-A, 60 Hertz

Primary voltage simple: 600/480V ll 575/460 ll 550/440

Secondary voltage: 120x240V ll 115x230 ll 110x220

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50UH	0.42/0.21	2.70	6.40	3.33	1.66	4.16	0.22 x 0.44	3.0
100	100	DCE100UH	0.83/0.42	3.09	6.30	3.60	2.05	3.50	0.22 x 0.44	4.2
150	150	DCE150UH	1.25/0.63	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.3
250	160	DCE250UH	2.08/1.04	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.6
350	250	DCE350UH	2.92/1.46	3.90	7.00	4.30	2.52	4.30	0.22 x 0.44	8.7
500	300	DCE500UH	4.17/2.08	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.3
750	500	DCE750UH	6.25/3.13	5.60	7.60	5.10	4.00	4.90	0.31 x 0.81	20.3
1000	650	DCE1000UH	8.33/4.17	5.60	8.00	5.10	4.00	5.30	0.31 x 0.81	22.9
1500	1000	DCE1500UH	12.5/6.25	5.60	9.40	5.10	4.00	6.70	0.31 x 0.81	30.3
2000	1300	DCE2000UH	16.7/8.33	6.60	9.10	6.00	5.10	5.70	0.31 x 0.81	37.1
3000	2000	DCE3000UH	25.0/12.5	7.80	11.30	6.70	6.30	6.90	0.31 x 0.81	64.0
5000	3000	DCE5000UH	40.7/20.8	9.30	14.9	8.00	7.10	7.30	0.31 x 0.81	99.7

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.

Note: for 750 throught 2000 VA units actual overall depth is 0.24" plus the value in column B.
All dimension are in inches 1 lb = 0,45kg

Atria SERIES-B, 60 Hertz

Primary voltage simple: 600/480V ll 575/460 ll 550/440

Secondary voltage double: 120x240V ll 115x230 ll 110x220

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50QC	4.17/2.08	2.70	5.80	3.33	1.66	3.58	0.22 x 0.44	2.3
100	100	DCE100QC	8.33/4.17	3.09	6.30	3.60	2.05	3.50	0.22 x 0.44	4.2
150	150	DCE150QC	12.5 /6.25	3.09	6.70	3.60	2.05	3.90	0.22 x 0.44	4.8
250	160	DCE250QC	20.8/10.4	3.90	6.20	2.52	2.52	3.50	0.22 x 0.44	6.4
350	250	DCE350QC	29.2/14.6	3.90	6.80	2.52	2.52	4.10	0.22 x 0.44	8.3
500	300	DCE500QC	41.7/20.8	4.60	6.80	3.30	3.30	4.50	0.31 x 0.81	11.8

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

GENERAL PURPOSE ENCLOSED TRANSFORMER

ATRIA

Atria SERIES-C, 50/60 Hertz

Primary voltage double: 240x480 ll 230x460 ll 220x440

Secondary voltage double: 120x240 ll 115x230 ll 110x220

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50PH	0.42/0.21	2.70	5.90	3.33	1.66	3.69	0.22 X 0.44	2.5
100	100	DCE100PH	0.83/0.42	3.09	6.30	3.60	2.05	3.50	0.22 X 0.44	3.9
150	150	DCE150PH	1.25/0.63	3.09	6.90	3.60	2.05	4.10	0.22 X 0.44	5.2
250	160	DCE250PH	2.08/1.04	3.90	6.60	4.30	2.52	3.90	0.22 X 0.44	7.7
350	250	DCE350PH	2.92/1.46	3.90	7.20	4.30	2.52	4.90	0.22 X 0.44	9.4
500	300	DCE500PH	4.17/2.08	4.60	7.20	4.60	3.30	4.50	0.31 X 0.81	13.2
750	500	DCE750PH	6.25/3.13	5.60	7.20	5.10	4.00	4.50	0.31 X 0.81	18.0
1000	650	DCE1000PH	8.33/4.17	5.60	8.00	5.10	4.00	5.30	0.31 X 0.81	22.8
1500	1000	DCE1500PH	12.5/6.25	6.60	8.50	6.00	5.10	5.10	0.31 X 0.81	31.1
2000	1300	DCE2000PH	16.7/8.33	6.60	9.10	6.00	5.10	5.70	0.31 X 0.81	38.1
3000	2000	DCE3000PH	25.0/12.5	7.80	11.70	6.70	6.30	7.30	0.31 X 0.81	68.5
5000	3000	DCE5000PH	41.7/20.8	9.30	15.10	8.00	7.40	7.30	0.31 X 0.81	104.2

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.

Note: for 750 throught 2000 VA units actual overall depth is 0.24" plus the value in column B.
All dimension are in inches 1 lb = 0,45kg

Atria SERIES-D, 50/60 Hertz

Primary voltage double: 240x480 ll 230x460 ll 220x440

Secondary voltage double: 12x24 ll 11.5x23 ll 11x22

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50PC	4.17/2.08	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.5
100	100	DCE100PC	8.33/4.17	3.09	6.10	3.60	2.05	3.35	0.22 x 0.44	3.90
150	150	DCE150PC	12.5/6.25	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.2
250	160	DCE250PC	20.8/10.4	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.7
350	250	DCE350PC	29.2/14.6	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.5
500	300	DCE500PC	41.7/20.8	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.4

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

GENERAL PURPOSE ENCLOSED TRANSFORMER

ATRIA

Atria SERIES-E, 50/60 Hertz

Primary voltage simple: 380/347

Secondary voltage double: 120x240

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50LH	0.42/0.21	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.5
100	100	DCE100LH	0.83/0.42	3.09	6.30	3.60	2.05	3.50	0.22 x 0.44	4.3
150	150	DCE150LH	1.25/0.63	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.3
250	160	DCE250LH	2.08/1.04	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.9
350	250	DCE350LH	2.92/1.46	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.6
500	300	DCE500LH	4.17/2.08	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.6
750	500	DCE750LH	6.25/3.13	5.60	7.20	5.10	4.00	4.50	0.31 x 0.81	19
1000	650	DCE1000LH	8.33/4.17	5.60	8.00	5.10	4.00	5.30	0.31 x 0.81	23.5
1500	1000	DCE1500LH	12.5/6.25	6.60	8.50	6.00	5.10	5.10	0.31 x 0.81	31.6

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

Atria SERIES-F, 50/60 Hertz

Primary voltage simple: 380/347

Secondary voltage double: 12x24

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50LC	4.17/2.08	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.5
100	100	DCE100LC	8.33/4.17	3.09	6.30	3.60	2.05	3.50	0.22 x 0.44	4.2
150	150	DCE150LC	12.5/6.25	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.3
250	160	DCE250LC	20.8/10.4	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.6
350	250	DCE350LC	29.2/14.6	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.3
500	300	DCE500LC	41.7/20.8	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.2

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

GENERAL PURPOSE ENCLOSED TRANSFORMER

ATRIA

Atria SERIES-G, 50/60 Hertz

Primary voltage simple: 277

Secondary voltage simple: 120

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50IE	0.42	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.4
100	100	DCE100IE	0.83	3.09	6.10	3.60	2.05	3.35	0.22 x 0.44	4.1
150	150	DCE150IE	1.25	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.2
250	160	DCE250IE	2.08	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.6
350	250	DCE350IE	2.92	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.3
500	300	DCE500IE	4.17	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.3
750	500	DCE750IE	6.25	5.60	7.60	5.10	4.00	4.90	0.31 x 0.81	20.1
1000	650	DCE1000IE	8.33	5.60	8.00	5.10	4.00	5.30	0.31 x 0.81	22.6
1500	1000	DCE1500IE	12.50	5.60	9.40	5.10	4.00	6.70	0.31 x 0.81	31.1

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kgg

Atria SERIES-H, 50/60 Hertz

Primary voltage double: 120x240 ǁ 115x230 ǁ 110x220

Tension secondaire double: 12x24 ǁ 11.5x23 ǁ 11x22

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50HC	4.17/2.08	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.5
100	100	DCE100HC	8.33/4.17	3.09	6.10	3.60	2.05	3.35	0.22 x 0.44	3.9
150	150	DCE150HC	12.5/6.25	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.2
250	160	DCE250HC	20.8/10.4	3.90	6.40	4.30	2.52	3.70	0.22 x 0.44	7.1
350	250	DCE350HC	29.2/14.6	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.4
500	300	DCE500HC	41.7/20.8	4.60	7.20	4.60	3.30	4.50	0.31 x 0.44	13.2

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

GENERAL PURPOSE ENCLOSED TRANSFORMER

ATRIA

Atria Series-I, 50/60 Hertz

Primary voltage double: 208x416 ll 200x400 ll 190x380

Secondary voltage double: 120x240 ll 115x230 ll 110x220

VA Rating	VA Ce Rating	Catalog number	Output Amps	Overall Dimension			Mounting Centers		Mounting Slot	Approx. ship weight Lbs.
				*A	*B	*C	*D	*E	*G x *H	
50	50	DCE50NH	0.42/0.21	2.70	5.90	3.33	1.66	3.69	0.22 x 0.44	2.4
100	100	DCE100NH	0.83/0.42	3.09	6.10	3.60	2.05	3.35	0.22 x 0.44	3.9
150	150	DCE150NH	1.25/0.63	3.09	6.90	3.60	2.05	4.10	0.22 x 0.44	5.2
250	160	DCE250NH	2.08/1.04	3.90	6.60	4.30	2.52	3.90	0.22 x 0.44	7.7
350	250	DCE350NH	2.92/1.46	3.90	7.20	4.30	2.52	4.90	0.22 x 0.44	9.5
500	300	DCE500NH	4.17/2.08	4.60	7.20	4.60	3.30	4.50	0.31 x 0.81	13.3
750	500	DCE750NH	6.25/3.13	5.60	7.20	5.10	4.00	4.50	0.31 x 0.81	18.2
1000	650	DCE000NH	8.33/4.17	5.60	8.00	5.10	4.00	5.30	0.31 x 0.81	22.5
1500	1000	DCE1500NH	12.5/6.25	6.60	8.50	6.00	5.10	5.10	0.31 x 0.81	30.1

Primary and secondary voltage links#jumpers supplied standard with all transformers.
Special voltage and VA sizes available upon request.
All dimension are in inches 1 lb = 0,45kg

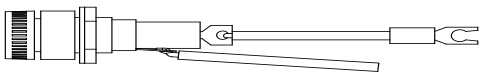
GENERAL PURPOSE ENCLOSED TRANSFORMER
ATRIA

OPTIONAL ACCESSORIES

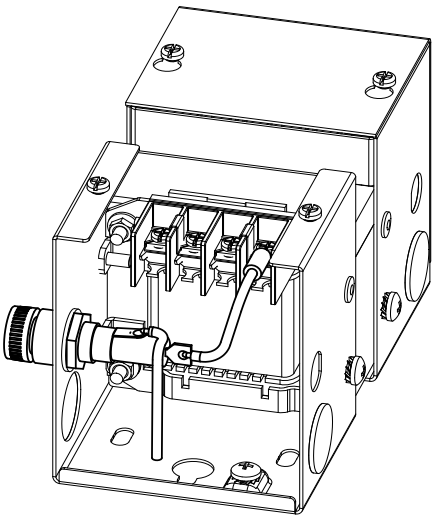
Fuse Holder Kit

This general purpose enclosed transformer optional fuse holder kit is specifically designed to provide circuit protection up to a maximum of 20 amps and up to 250V. The fuse holder kit is supplied with leads for easy hook-up and is easy to install. **Fuses are NOT supplied with this kit.** Fuses should be selected in accordance with CSA, UL and local electrical codes. (Note: Fuseholder is designed to accept 1/4" x 1 1/4")

Part Number	Applicable Transformer Part Number Suffix's	Applicable Specifications
FSFH1	ALL	Up to 20Amps and 250V



Fuse Holder Kit
(Optional)



Sample Assembly Drawing for
Optional Fuse Holder Installation

GENERAL PURPOSE ENCLOSED TRANSFORMER ATRIA

DIMENSIONAL DRAWINGS

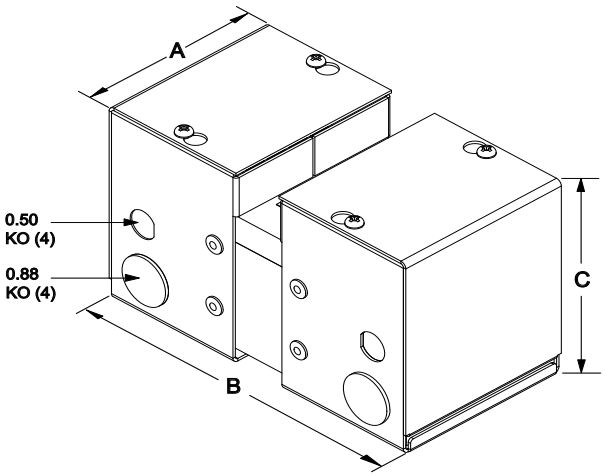
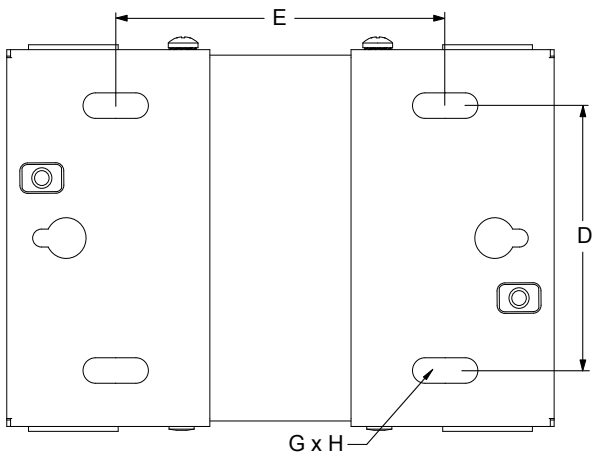
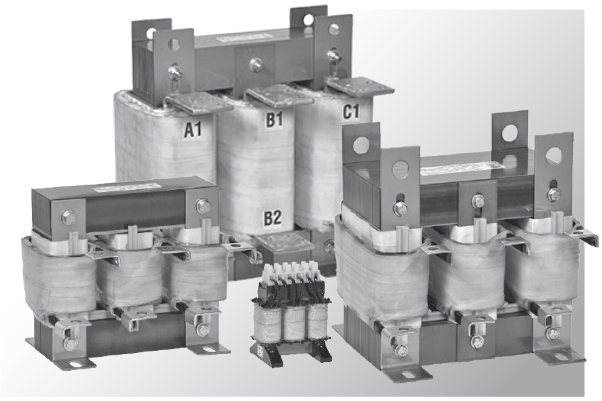


FIGURE A

FIGURE B



NOVA REACTORS



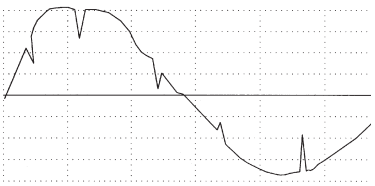
Delta NOVA Reactors

The new Delta Nova Reactors provides a unique blend of improved performance and reliability while reducing the product footprint. Nova Reactors deliver protection for your motors and AC drives, while minimizing power system harmonics. They are available in standard ratings from 0.5 HP (373 Watts) to 250HP (745k kilowatts), up to 600V (690V with de-rating) and are fully compliant with UL, CSA, CE, IEC, and NEMA standards.

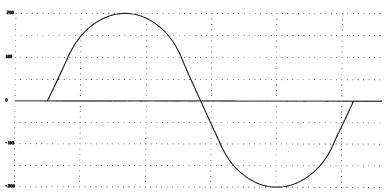
The efficient and cost effective NOVA Reactors are built to satisfy the power quality needs of demanding AC drive applications.

WHY CHOOSE A REACTOR?

Delta Transformers reactors are designed to address line-side issues associated with variable frequency drives. They attenuate voltage and current transients that can cause nuisance tripping of a drive. Reactors also minimize harmonic current levels within the drive supply circuit. When used on the output side of IGBT-based, PWM-type AC drives, Delta Transformers reactors reduce the motor operation temperature and audible noise by moderation line transients seen by the motor. The use of Delta's reactors enhances the overall system performance, life expectancy and efficiency of the motor.



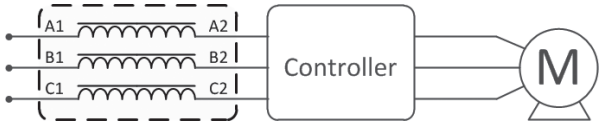
Voltage waveform illustrating line notching caused by the DC rectifier in typical AC drives.



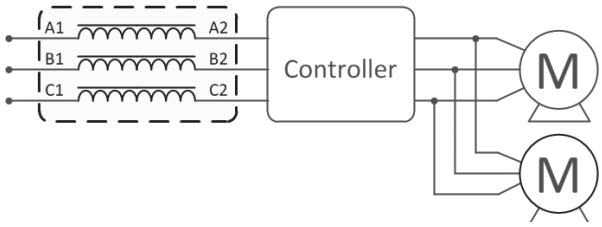
Ideal sine wave from the utility supply.

Connection diagram

(a) Single motor

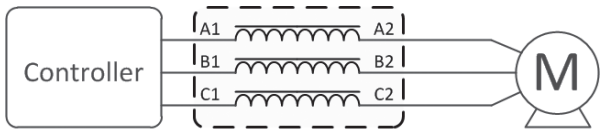


(b) Multiple motors

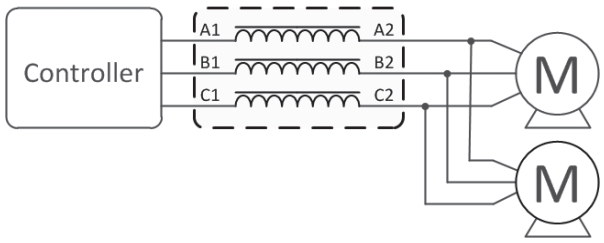


Input Side

(a) Single motor



(b) Multiple motors



Output Side

NOVA REACTORS

Construction of a reactor.

Assembly

- The impedance of the reactors is accurately controlled by maintaining the core gaps in the flux path.
- In some HP ranges, bobbins are used to provide exceptional mechanical strength and increase the product reliability.
- All reactor are vacuum pressure impregnations.

Terminations

- Finger-proof terminal blocks are provided on rated currents of approximately below 65 Amps.
- Terminal pads are supplied on approximately 65 Amps and above.- Terminal pads are brazed to ensure electrical integrity.

Enclosures

- Type 1 standard (3R available: consult Delta for availability).
- Rugged steel enclosures with UL50 ANSI 61 grey paint.
- Enclosure kits are available separately allowing assembly in approved facility.

Benefits

- Mitigate nuisance tripping.
- Extend the life of switching components and motors.
- Reduce audible motor noise and motor operating temperature.
- Mitigate the effect of long lead lenght.
- Minimizer harmonic distortion.
- Reduce line notching.

Specifications

Impedance Rating	1,5%, 3% and 5%	
System Frequency	50/60 Hertz*	
System Voltage Ratings	208 V, 240 V, 480 V, 600 V	
	(690 V de-rating)	
Altitude (de-rating)	Comply with NEMA ST20	
Inductance Tolerance	+15/-10%	
Inductance Curve	**% Nominal Inductance**	**% Rated Current**
	100	100
	95	110
	80	150
	50	200
Dielectric Strength to ground	4000 volts for 1 minute or equivalent	
Cooling Method	Natural convection	
Insulation System	-70ºC rise over average 50°C ambient for 130ºC temperature class -115ºC rise over average 50°C ambient for 180ºC and 220ºC temperature class.	
Warranty	10 year limited warranty	

SPECIFICATIONS SUBJECT TO CHANGE

COMPLIANCE & APPROVALS

NOVA Reactor is certified to the following standards:

- UL 508
- CSA C9
- CSA C22.2 No. 47 standards
- CE Mark (IEC 61558-2-20:2000)
- UL Listed (up to 600V), file n° E61431
- CSA Certified file n° LR3902
- IEC 61558-2-20

SELECTION TABLES

HP Rating	208 Volt - 60Hz			
	3% Impedance*		5% Impedance*	
	Amps	Core & Coil Part Number	Amps	Core & Coil Part Number
0.5	2.4	DTX02D4BC	2.4	DTX02D4DC
0.75	3.5	DTX03D5AC	3.5	DTX03D5DC
1	4.6	DTX04D6BC	4.6	DTX04D6CC
1.5	6.6	DTX06D6BC	6.6	DTX06D6CC
2	7.5	DTX07D5AC	7.5	DTX07D5DC
3	10.7	DTX10D7BC	10.7	DTX10D7DC
5	16.7	DTX16D7BC	16.7	DTX16D7DC
7.5	24	DTX0024AC	24	DTX0024CC
10	31	DTX0031BC	31	DTX0031CC
15	46	DTX0046BC	46	DTX0046CC
20	59	DTX0059AC	59	DTX0059CC
25	75	DTX0075AC	75	DTX0075CC
30	88	DTX0088BC	88	DTX0088CC
40	114	DTX0114AC	114	DTX0114CC
50	143	DTX0143AC	143	DTX0143DC
60	170	DTX0170BC	170	DTX0170DC
75	211	DTX0211BC	211	DTX0211CC
100	273	DTX0273BC	273	DTX0273CC
125	343	DTX0343BC	343	DTX0343CC
150	396	DTX0396BC	396	DTX0396DC
200	528	DTX0528BC	528	DTX0528CC

HP Rating	240 Volt - 60Hz			
	3% Impedance*		5% Impedance*	
	Amps	Core & Coil Part Number	Amps	Core & Coil Part Number
0.5	2.4	DTX02D4AC	2.4	DTX02D4CC
0.75	3.5	DTX03D5BC	3.5	DTX03D5CC
1	4.6	DTX04D6AC	4.6	DTX04D6DC
1.5	6.6	DTX06D6AC	6.6	DTX06D6DC
2	7.5	DTX07D5BC	7.5	DTX07D5CC
3	10.7	DTX10D7AC	10.7	DTX10D7CC
5	16.7	DTX16D7AC	16.7	DTX16D7CC
7.5	24	DTX0024BC	24	DTX0024DC
10	31	DTX0031AC	31	DTX0031DC
15	46	DTX0046AC	46	DTX0046DC
20	59	DTX0059BC	59	DTX0059DC
25	75	DTX0075BC	75	DTX0075DC
30	88	DTX0088AC	88	DTX0088DC
40	114	DTX0114BC	114	DTX0114DC
50	143	DTX0143BC	143	DTX0143CC
60	170	DTX0170AC	170	DTX0170CC
75	211	DTX0211AC	211	DTX0211DC
100	273	DTX0273AC	273	DTX0273DC
125	343	DTX0343AC	343	DTX0343DC
150	396	DTX0396AC	396	DTX0396CC
200	528	DTX0528AC	528	DTX0528DC

HP Rating	480 Volt - 60Hz			
	3% Impedance*		5% Impedance*	
	Amps	Core & Coil Part Number	Amps	Core & Coil Part Number
0.5	1.1	DTX01D1AC	1.1	DTX01D1BC
0.75	1.6	DTX01D6AC	1.6	DTX01D6BC
1	2.1	DTX02D1AC	2.1	DTX02D1BC
1.5	3	DTX0003AC	3	DTX0003BC
2	3.4	DTX03D4AC	3.4	DTX03D4BC
3	4.8	DTX04D8AC	4.8	DTX04D8BC
5	7.6	DTX07D6AC	7.6	DTX07D6BC
7.5	11	DTX0011BC	11	DTX0011CC
10	14	DTX0014AC	14	DTX0014BC
15	21	DTX0021AC	21	DTX0021BC
20	27	DTX0027BC	27	DTX0027CC
25	34	DTX0034AC	34	DTX0034BC
30	40	DTX0040AC	40	DTX0040BC
40	52	DTX0052BC	52	DTX0052DC
50	65	DTX0065AC	65	DTX0065BC
60	77	DTX0077AC	77	DTX0077DC
75	96	DTX0096AC	96	DTX0096BC
100	124	DTX0124AC	124	DTX0124BC
125	156	DTX0156AC	156	DTX0156BC
150	180	DTX0180AC	180	DTX0180BC
200	240	DTX0240AC	240	DTX0240BC
250	302	DTX0302AC	302	DTX0302BC

HP Rating	600 Volt - 60Hz			
	3% Impedance*		5% Impedance*	
	Amps	Core & Coil Part Number	Amps	Core & Coil Part Number
0.5	1	DTX0001AC	1	DTX0001BC
0.75	1.4	DTX01D4AC	1.4	DTX01D4BC
1	1.8	DTX01D8AC	1.8	DTX01D8BC
1.5	2.6	DTX02D6AC	2.6	DTX02D6BC
2	2.7	DTX02D7AC	2.7	DTX02D7BC
3	3.9	DTX03D9AC	3.9	DTX03D9BC
5	6.1	DTX06D1AC	6.1	DTX06D1BC
7.5	9	DTX0009AC	9	DTX0009BC
10	11	DTX0011AC	11	DTX0011DC
15	17	DTX0017AC	17	DTX0017BC
20	22	DTX0022AC	22	DTX0022BC
25	27	DTX0027AC	27	DTX0027DC
30	32	DTX0032AC	32	DTX0032BC
40	41	DTX0041AC	41	DTX0041BC
50	52	DTX0052AC	52	DTX0052CC
60	62	DTX0062AC	62	DTX0062BC
75	77	DTX0077BC	77	DTX0077CC
100	99	DTX0099AC	99	DTX0099BC
125	125	DTX0125AC	125	DTX0125BC
150	144	DTX0144AC	144	DTX0144BC
200	192	DTX0192AC	192	DTX0192BC
250	242	DTX0242AC	242	DTX0242BC

*** Impedance levels are for 60 Hz operation** *** Specifications are subject to change without notice**

OPEN CORE AND COILS

RMS Amp	Core & Coil	Inductance (mH)	Watts Loss	Width	Depth	Height	Mtg. Width	Mtg. Depth	Mtg. Slot w x d	Diagram Figure	Termination Style Ref.	Frame Size	Enclosure Style (Optional for Field Install)	Weight (lb)
1	DTX0001AC	27.20	21	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX0001BC	47.09	12	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
1.1	DTX01D1AC	20.36	12	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX01D1BC	33.94	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
1.4	DTX01D4AC	20.36	12	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX01D4BC	33.94	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
1.6	DTX01D6AC	14.91	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX01D6BC	23.55	12	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
1.8	DTX01D8AC	14.91	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX01D8BC	27.20	21	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
2	DTX0002CC	20.00	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
2.1	DTX02D1AC	10.61	19	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX02D1BC	17.83	21	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
2.4	DTX02D4AC	4.67	29	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX02D4BC	4.08	9	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX02D4CC	7.06	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX02D4DC	7.06	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
2.6	DTX02D6AC	10.61	35	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX02D6BC	17.83	21	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
2.7	DTX02D7AC	10.61	19	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX02D7BC	17.83	21	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
3	DTX0003AC	7.06	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX0003BC	10.61	35	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
3.4	DTX03D4AC	7.06	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX03D4BC	10.61	35	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
3.5	DTX03D5AC	2.80	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX03D5BC	3.55	18	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX03D5CC	5.09	40	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
	DTX03D5DC	4.67	29	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
3.9	DTX03D9AC	7.06	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX03D9BC	10.61	35	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
4	DTX0004CC	9.10	26	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
4.6	DTX04D6AC	2.13	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX04D6BC	2.13	15	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX04D6CC	3.55	18	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX04D6DC	4.67	29	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
4.8	DTX04D8AC	4.70	22	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX04D8BC	7.78	35	4.13	3.51	5.13	2.87	2.63	0.28 x 0.38	1	1	1B	N1	4.5
6.1	DTX06D1AC	4.67	29	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX06D1BC	7.78	35	4.13	3.51	5.13	2.87	2.63	0.28 x 0.38	1	1	1B	N1	4.5
6.6	DTX06D6AC	1.48	18	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX06D6BC	1.48	18	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX06D6CC	2.33	24	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX06D6DC	3.06	31	4.13	3.51	5.13	2.87	2.63	0.28 x 0.38	1	1	1B	N1	4.5
7.5	DTX07D5AC	1.31	18	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	2.5
	DTX07D5BC	1.53	25	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX07D5CC	2.33	24	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
	DTX07D5DC	2.33	24	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1A	N1	3
7.6	DTX07D6AC	3.06	31	4.13	3.51	5.13	2.87	2.63	0.28 x 0.38	1	1	1B	N1	4.5
	DTX07D6BC	5.09	40	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
8	DTX0008CC	7.50	39	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	12

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OPEN CORE AND COILS

RMS Amp	Core & Coil	Inductance (mH)	Watts Loss	Width	Depth	Height	Mtg. Width	Mtg. Depth	Mtg. Slot w x d	Diagram Figure	Termination Style Ref.	Frame Size	Enclosure Style (Optional for Field Install)	Weight (lb)
9	DTX0009AC	3.06	31	4.13	3.51	5.13	2.87	2.63	0.28 x 0.38	1	1	1B	N1	4.5
	DTX0009BC	5.09	40	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
10.7	DTX10D7AC	0.95	30	4.13	3.51	5.38	2.87	2.63.	0.28 x 0.38	1	2	1C	N1	4.5
	DTX10D7BC	0.95	30	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX10D7CC	1.64	37	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX10D7DC	1.53	25	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
11	DTX0011AC	2.57	36	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	5
	DTX0011BC	2.10	31	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX0011CC	3.40	39	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
	DTX0011DC	4.28	45	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
12	DTX0012CC	4.20	52	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	12
14	DTX0014AC	1.64	37	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX0014BC	2.73	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11.5
16.7	DTX16D7AC	0.59	30	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX16D7BC	0.59	30	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX16D7CC	1.06	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	11.5
	DTX16D7DC	0.95	30	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
17	DTX0017AC	1.66	51	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	10.5
	DTX0017BC	2.73	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11.5
21	DTX0021AC	1.06	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	11.5
	DTX0021BC	1.80	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11.5
22	DTX0022AC	1.28	51	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
	DTX0022BC	2.14	77	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	12
24	DTX0024AC	0.41	35	4.13	3.51	5.38	2.87	2.63	0.28 x 0.38	1	2	1C	N1	4.5
	DTX0024BC	0.55	68	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12
	DTX0024CC	0.68	47	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	11
	DTX0024DC	0.86	60	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	10.5
27	DTX0027AC	1.06	8	4.13	2.29	5.13	2.81	1.79	0.28 x 0.38	1	1	1D	N1	11.5
	DTX0027BC	0.86	60	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	2	1D	N1	10.5
	DTX0027CC	1.40	57	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12.5
	DTX0027DC	1.77	93	7.12	4.69	6.38	4.80	3.27	0.28 x 0.38	2	3	2A	N2	11.5
31	DTX0031AC	0.32	31	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	10.5
	DTX0031BC	0.32	31	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	10.5
	DTX0031CC	0.55	68	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12
	DTX0031DC	0.68	80	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12.5
32	DTX0032AC	0.88	68	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12
	DTX0032BC	1.43	80	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	12.5
34	DTX0034AC	0.68	80	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12.5
	DTX0034BC	1.13	115	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	12
35	DTX0035CC	1.70	93	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	24
40	DTX0040AC	0.55	68	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12
	DTX0040BC	0.94	105	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	12.5
41	DTX0041AC	0.68	80	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	12.5
	DTX0041BC	1.13	115	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	12
45	DTX0045CC	1.20	140	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	24
46	DTX0046AC	0.21	40	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	11
	DTX0046BC	0.21	40	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	11
	DTX0046CC	0.36	60	6.50	5.00	6.13	4.38	4.00	028 x 0.38	1	3	1D	N1	11.5
	DTX0046DC	0.45	130	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	19
52	DTX0052AC	0.50	70	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	15
	DTX0052BC	0.43	85	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N 2	17

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OPEN CORE AND COILS

RMS Amp	Core & Coil	Inductance (mH)	Watts Loss	Width	Depth	Height	Mtg. Width	Mtg. Depth	Mtg. Slot w x d	Diagram Figure	Termination Style Ref.	Frame Size	Enclosure Style (Optional for Field Install)	Weight (lb)
52	DTX0052CC	0.91	130	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	25
	DTX0052DC	0.74	170	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	25
59	DTX0059AC	0.17	55	6.50	5.00	6.13	4.38	4.00	0.28 x 0.38	1	3	1D	N1	11.5
	DTX0059BC	0.22	85	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	18
	DTX0059CC	0.30	75	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	16
	DTX0059DC	0.36	110	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	25
62	DTX0062AC	0.45	130	7.12	4.69	6.38	4.80	3.27	0.38 x 0.50	2	3	2A	N2	19
	DTX0062BC	0.74	170	7.12	5.19	6.38	4.80	3.77	0.38 x 0.50	2	3	2B	N2	25
65	DTX0065AC	0.34	110	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	25
	DTX0065BC	0.57	120	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	25
75	DTX0075AC	0.12	70	7.25	5.88	5.63	480	3.27	0.38 x 0.50	3	4	3A	N2	17
	DTX0075BC	0.19	95	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	18
	DTX0075CC	0.22	85	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	18
	DTX0075DC	0.29	105	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	21
77	DTX0077AC	0.29	105	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	21
	DTX0077BC	0.36	110	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	25
	DTX077CC	0.60	216	9.25	6.25	7.00	6.00	3.70	0.44 x 1.0	3	4	3E	N2	30
	DTX077DC	0.49	160	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	24
88	DTX0088AC	0.12	70	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	17
	DTX0088BC	0.12	70	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	17
	DTX0088CC	0.19	95	7.25	5.88	5.63	4.80	3.27	0.38 x 0.50	3	4	3A	N2	18
	DTX0088DC	0.24	120	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	24
96	DTX0096AC	0.24	120	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	24
	DTX0096BC	0.39	170	9.25	8.25	7.00	6.00	5.70	0.44 x 1.0	3	4	3N	N2	49
99	DTX0099AC	0.28	125	7.25	6.00	5.63	4.80	3.77	0.38 x 0.50	3	4	3C	N2	26
	DTX0099BC	0.48	210	9.25	8.00	7.00	6.00	5.45	0.44 x 1.0	3	4	3L	N2	48
114	DTX0114AC	0.09	70	7.25	6.00	5.63	4.80	3.27	0.38 x 0.50	3	5	3B	N2	18
	DTX0114BC	0.11	140	9.25	6.75	7.00	6.00	3.83	0.44 x 1.0	3	5	3F	N2	28
	DTX0114CC	0.14	110	9.25	7.25	7.00	6.00	4.33	0.44 x 1.0	3	5	3J	N2	33
	DTX0114DC	0.19	190	10.80	8.25	10.00	7.20	5.21	0.44 x 1.0	4	5	4A	CH2	52
124	DTX0124AC	0.19	190	10.80	8.25	10.00	7.20	5.21	0.44 x 1.0	4	5	4A	CH2	52
	DTX0124BC	0.30	185	9.25	8.63	7.00	6.00	5.20	0.44 x 1.0	3	4	3Q	N2	48
125	DTX0125AC	0.23	160	9.25	7.63	7.00	6.00	4.70	0.44 x 1.0	3	5	3K	N2	41
	DTX0125BC	0.38	250	10.80	9.13	10.00	7.20	6.08	0.44 x 1.0	4	5	4C	CH2	67
143	DTX0143AC	0.07	88	7.25	6.00	5.63	4.80	3.27	0.38 x 0.50	3	5	3B	N2	20
	DTX0143BC	0.10	130	9.25	7.00	7.00	6.00	3.95	0.44 x 1.0	3	5	3H	N2	34
	DTX0143CC	0.11	140	9.25	6.75	7.00	6.00	3.83	0.44 x 1.0	3	5	3F	N2	28
	DTX0143DC	0.11	140	9.25	6.75	7.00	6.00	3.83	0.44 x 1.0	3	5	3F	N2	28
144	DTX0144AC	0.19	190	10.80	8.25	10.00	7.20	5.21	0.44 x 1.0	4	5	4A	CH2	52
	DTX0144BC	0.35	240	10.80	9.50	10.00	7.20	6.33	0.44 x 1.0	4	5	4D	CH4	74
156	DTX0156AC	0.15	210	9.25	7.00	7.00	6.00	4.08	0.44 x 1.0	3	5	3G	N2	32
	DTX0156BC	0.24	260	9.25	8.63	7.00	6.00	5.70	0.44 x 1.0	3	5	3R	CH2	32
170	DTX0170AC	0.06	100	7.25	6.25	5.63	4.80	3.77	0.38 x 0.50	3	5	3D	N2	23
	DTX0170BC	0.06	100	7.25	6.25	5.63	4.80	3.77	0.38 x 0.50	3	5	3D	N2	23
	DTX0170CC	0.10	130	9.25	7.00	7.00	6.00	3.95	0.44 x 1.0	3	5	3H	N2	34
	DTX0170DC	0.10	130	9.25	7.00	7.00	6.00	3.95	0.44 x 1.0	3	5	3H	N2	34
180	DTX0180AC	0.13	180	9.25	8.88	7.00	6.00	5.95	0.44 x 1.0	3	5	3S	CH2	54
	DTX0180BC	0.21	250	10.80	8.38	10.00	7.20	5.33	0.44 x 1.0	4	5	4B	CH2	63
192	DTX0192AC	0.15	200	9.25	8.25	7.00	6.00	5.45	0.44 x 1.0	3	5	3P	CH2	53
	DTX0192BC	0.25	325	10.80	10.50	10.00	7.20	7.33	0.44 x 1.0	4	5	4E	CH2	90
200	DTX0200CC	0.11	195	9.25	7.63	7.00	6.00	4.70	0.44 x 1.0	3	5	3K	CH2	44

***Impedance levels are for 60 Hz operation** ***specifications subject to change**

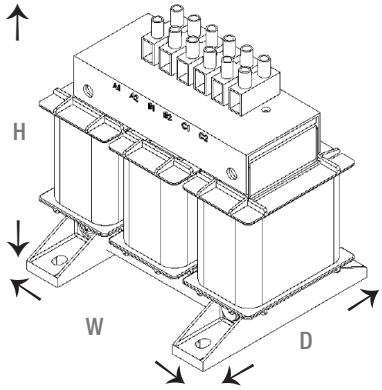
OPEN CORE AND COILS

RMS Amp	Core & Coil	Inductance (mH)	Watts Loss	Width	Depth	Height	Mtg. Width	Mtg. Depth	Mtg. Slot w x d	Diagram Figure	Termination Style Ref.	Frame Size	Enclosure Style (Optional for Field Install)	Weight (lb)
211	DTX0211AC	0.05	125	7.25	6.25	5.63	4.80	3.77	0.38 x 0.50	3	5	3D	N2	24
	DTX0211BC	0.05	125	7.25	6.25	5.63	4.80	3.77	0.38 x 0.50	3	5	3D	N2	24
	DTX0211CC	0.08	180	9.25	7.63	7.00	6.00	4.70	0.44 x 1.0	3	5	3K	CH2	39
	DTX0211DC	0.10	225	11.05	8.25	10.00	7.20	5.21	0.44 x 1.0	4	5	4G	CH2	58
240	DTX0240AC	0.10	225	11.05	8.25	10.00	7.20	5.21	0.44 x 1.0	4	5	4G	CH2	58
	DTX0240BC	0.16	4.35	13.75	11.63	12.50	9.00	8.70	0.44 x 1.0	4	5	4V	CH4	155
242	DTX0242AC	0.12	275	11.05	8.25	10.00	7.20	5.08	0.44 x 1.0	4	5	4F	CH2	59
	DTX0242BC	0.20	360	11.05	9.50	10.00	7.20	6.46	0.44 x 1.0	4	5	4M	CH4	87
273	DTX0273AC	0.04	130	9.25	8.13	7.00	6.00	5.20	0.44 x 1.0	3	5	4M	CH2	43
	DTX0273BC	0.04	130	8.25	8.13	7.00	6.00	5.20	0.44 x 1.0	3	5	3M	CH2	43
	DTX0273CC	0.06	200	11.05	9.13	10.00	7.20	6.08	0.44 x 1.0	4	5	4L	CH4	67
	DTX0273DC	0.08	310	13.75	9.00	12.50	9.00	6.05	0.44 x 1.0	4	5	4M	CH4	84
302	DTX0302AC	0.08	310	13.75	9.00	12.50	9.00	6.05	0.44 x 1.0	4	5	4M	CH4	84
	DTX0302BC	0.13	475	13.75	11.38	14.50	9.00	8.42	0.44 x 1.0	4	5	4AA	CH4	171
343	DTX0343AC	0.03	200	11.05	8.63	10.00	7.20	5.58	0.44 x 1.0	4	5	4H	CH4	57
	DTX0343BC	0.03	200	11.05	8.63	10.00	7.20	5.58	0.44 x 1.0	4	5	4H	CH4	57
	DTX0343CC	005	230	11.05	8.588	10.00	7.20	5.83	0.44 x 1.0	4	5	4J	CH4	66
	DTX0343DC	0.06	325	13.75	9.38	12.50	9.00	6.42	0.44 x 1.0	4	5	4Q	CH4	95
396	DTX0396AC	0.03	200	11.05	8.63	10.00	7.20	5.58	0.44 x 1.0	4	5	4H	CH4	57
	DTX0396BC	0.03	200	11.05	8.63	10.00	7.20	5.58	0.44 x 1.0	4	5	4H	CH4	57
	DTX0396CC	0.04	300	13.75	9.38	12.50	9.00	6.42	0.44 x 1.0	4	5	4Q	CH4	92
	DTX0396DC	0.04	300	13.75	9.38	12.50	9.00	6.42	0.44 x 1.0	4	5	4Q	CH4	92
528	DTX0528AC	0.02	220	13.75	9.38	12.50	9.00	5.70	0.44 x 1.0	4	6	4P	CH5	74
	DTX0528BC	0.02	220	13.75	9.38	12.50	9.00	5.70	0.44 x 1.0	4	6	4P	CH5	74
	DTX0528CC	0.03	355	13.75	9.63	14.50	9.00	6.17	0.44 x 1.0	4	6	4X	CH5	102
	DTX0528DC	0.04	495	13.75	10.63	14.50	9.00	7.17	0.44 x 1.0	4	6	4Y	CH5	133

***Impedance levels are for 60 Hz operation** ***specifications subject to change**

DIAGRAMS

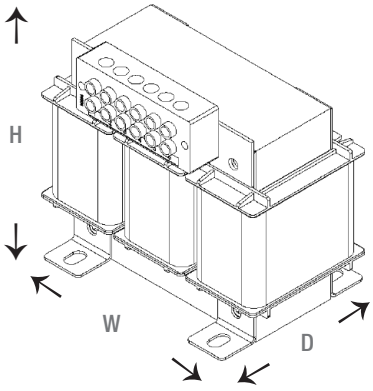
FIGURE 1



Mounting hardware (not included)

4 pcs - 1/4 in. bolts
4 pcs - 1/4 in. nuts
8 pcs - 1/4 in. flat washers
4 pcs - 1/4 in. lock washers
Max. tightening torque: 5.5 ft-lb

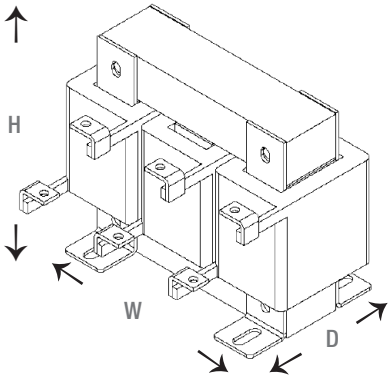
FIGURE 2



Mounting hardware (not included)

4 pcs - 5/16 in. bolts
4 pcs - 5/16 in. nuts
8 pcs - 5/16 in. flat washers
4 pcs - 5/16 in. lock washers
Max. tightening torque: 18 ft-lb

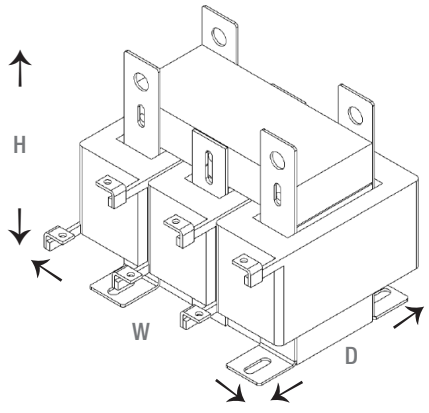
FIGURE 3



Mounting hardware (not included)

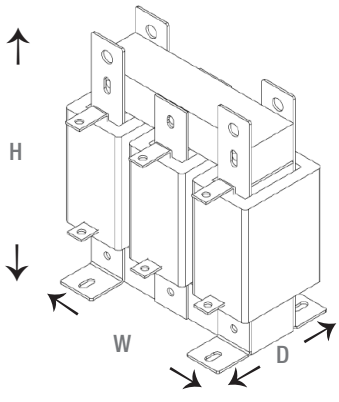
	.38x.5 slot	.44x1.0 slot
4 pcs bolts	5/16 po.	3/8 po.
4 pcs nuts	5/16 po.	3/8 po.
8 pcs flat washers	5/16 po.	3/8 po.
4 pcs lock washers	5/16 po.	3/8 po.
Max. tightening torque:	18 ft-lb	28 ft-lb

FIGURE 4



Mounting hardware (not included)
4 pcs - 3/8 in. bolts
4 pcs - 3/8 in. nuts
8 pcs - 3/8 in. flat washers
4 pcs - 3/8 in. lock washers
Max. tightening torque: 28 ft-lb

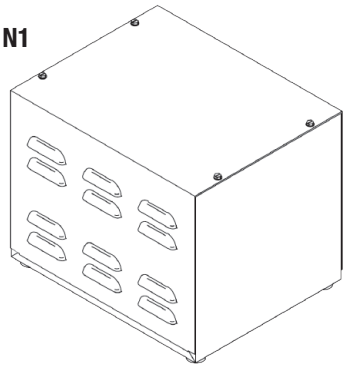
FIGURE 5



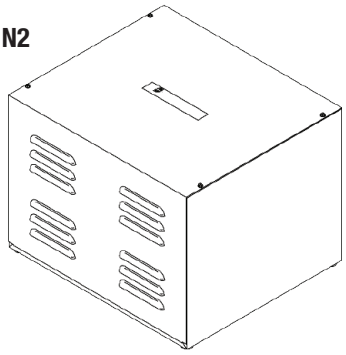
Mounting hardware (not included)
4 pcs - 3/8 in. bolts
4 pcs - 3/8 in. nuts
8 pcs - 3/8 in. flat washers
4 pcs - 3/8 in. lock washers
Max. tighteningt torque: 28 ft-lb

ENCLOSURE STYLES

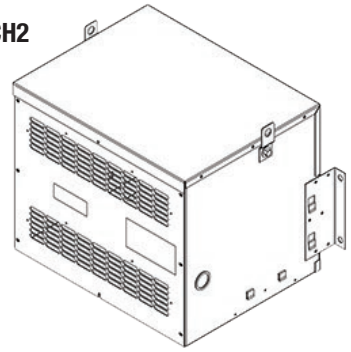
N1



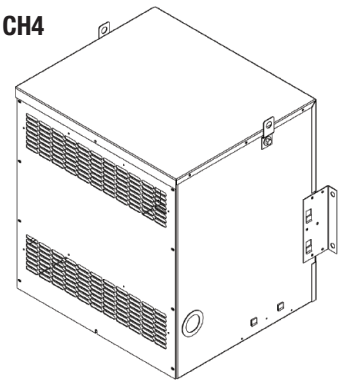
N2



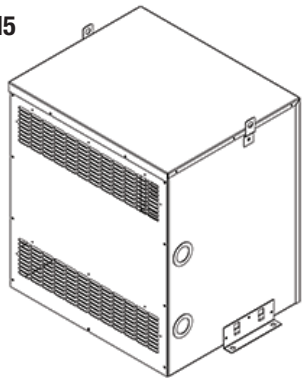
CH2



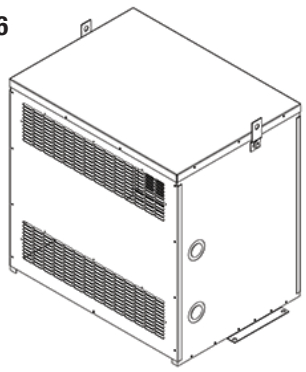
CH4



CH5



CH6

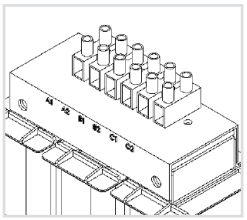


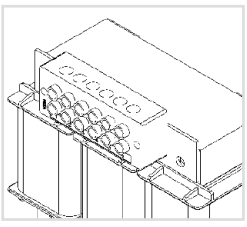
Termination Style Reference

Style Number	Size	Amps
1	18-14 AWG	9
2	13-10 AWG	27
3	4-14 AWG	64
4	0.28"	110
5	0.44"	472
6	0.56"	840
7	4 x 0.53"	1200

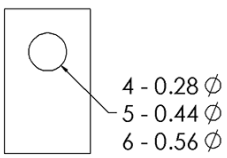
Style # 1, 2, 3

Use applicable terminal block

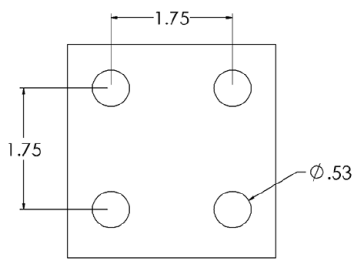




Style # 4, 5, 6



Style # 7



MISCELLANEOUS INFORMATIONS

CSA : DISTRIBUTION NOMENCLATURE SYSTEM

		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
-	STANDARD ITEM												
-	CDTC0030VHA6XXBA	C	D	T	C	0030	VH	A	6	X	X	B	A
-	NON STANDARD ITEM	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
-	CDTC0030 Sxxxxxx	C	D	T	C	0030		S	9	9	9	9	9
-	MINI POWER CENTRE	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
-	CCTC1A15VHB6XXBR	C	C	T	C	1A15	VH	B	6	X	X	B	R

(**) When the transformer is special (i.e. different than the following standard designation described in position VI to IX) all the alphanumeric described in position VII to XII are replaced by << SXXXXXX>> where <<X>> is a numeric between 0 to 9

C - All devices are so designated.
Z - Non certified product
V - Non Linear Load
U - US Enclosed type
R - US Open Type
X - Hazardeous Location
P - Epoxy potted Industrial
B - Epoxy potted Commercial

PRIMARY & SECONDARY VOLTAGE

A = 12	M = 347	Y =	2400		
B = 16	N = 380	Z =	4160		
C = 24	O = 416	0 =	400		
D = 32	P = 440	1 =	6900		
E = 110	Q = 460	2 =	7200		
F = 115	R = 480	3 =	8320		
G = 120	S = Spcl	4 =	12470		
H = 208	T = 550	5 =	13800		
I = 220	U = 575	6 =	13860		
J = 230	V = 600	7 =	14400		
K = 240	W = 2200	8 =	24940		
L = 277	X = 2300	9 =	27600		
		- =	Not provided		

TEMPERATURE RISE

A = 150°C	N =	95°C	
B = 115°C	O =	90°C	
C = 80°C	P =	85°C	
D = 55°C	Q =	75°C	
E = 145°C	R =	70°C	
F = 140°C	S =	65°C	
G = 135°C	T =	60°C	
H = 130°C	U =	50°C	
I = 125°C	V =	45°C	
J = 120°C	W =	40°C	
K = 110°C	X =	35°C	
L = 105°C	Y =	30°C	
M = 100°C	Z =	25°C	

WINDING CONFIGURATION

A - 3ph Delta - Delta
B - 3ph Delta - Star
C - 3ph Star - Star
D - 3ph Star - Delta
J - 1ph Prim. (Single) Second. (Single)
K - 1ph Prim. (Double) Second. (Single)
L - 1ph Prim. (Single) Second. (Double)
M - 1ph Prim. (Double), Second. (Double)
N - Zero-Sequence Filter

PHASE

S Singleø non C802
1 Singleø C802
2 Singleø Nrcan 2018
T Threeø non C802
3 Threeø C802
6 Threeø NRCAN 2018

WINDING

A - Aluminum
C - Copper

I	II	III	IV	V *	V**	VI	VII	VIII	IX	X	XI	XII
C	D	T	C			VH	A	6	X	X	B	A

TYPE OF TRANSFORMER

A - Autotransformer
C - Mini - Power Centre
D - Isolation transformer
E - Epoxy Potted
I - Drive Isolation Transformer
F - Zero-Sequence Filter
Z - Interconnected Star xfo (Mitigator)
K - K - Factor
L - 20 kv BIL Primary (2400V)
M - 30 kv BIL Primary (4160V)
N - 45 kv BIL Primary
R - 60 kv BIL Primary (layer)
T - 60 kv BIL Primary (disk)
P - 95 kv BIL Primary
X - 125 kv BIL Primary
Y - 150 kv BIL Primary
S - Special Primary BIL (75, 110 kv)

V* & V OTHER THAN (MPC)**

0030 - kVA Rating (4 digits)

V* & V MINI POWER CENTRE**

V*
1A Cutler Hammer 24 circuits
3B Square D 30 circuits
V**
15 kVA Rating (2 digits)

FREQUENCY

5 = 50 / 60 Hz
6 = 60 Hz

K FACTOR

A = 4
B = 9
C = 13
D = 20
E = 30
X = Not rated

ELECTROSATTIC SHIELD

1 - Qty of ESS
X - Not provided

ENCLOSURE TYPE (COLOR ASA-61 GRAY)

A - 1
B - 2
D - 3R & Epoxy
E - 4
G - Open Type (Without enclosure)
H - 4X (Stainless Steel, not Painted)
J - 12
R- 3R (MINI POWER CENTRE)

TECHNICAL DATA SHEET FOR POWER TRANSFORMER

Quantity : _____	____KVA ANN Three-phases ____KVA ANF 60 Hz	Temperature rise: 150˚C ☐ 115˚C ☐ 80˚C ☐ Insulation class : 220˚C
Primary voltage: ____kV	BIL : ____kV ☐ Delta or ☐ Wye	
Secondary voltage: ____kV	BIL : ____kV ☐ Delta or ☐ Wye	
Winding :	☐ Copper or ☐ Aluminum	
Primary:	Close coupled: ☐ Yes ☐ No or Provisions for Incoming cables: ☐ Yes ☐ No	
Secondary:	Close coupled: ☐ Yes ☐ No or Provisions for Outcoming cables: ☐ Yes ☐ No	
Enclosure :	☐ Type 1 ☐ Type 2 ☐ Type 3R Indoor ☐ Type 3R Outdoor	
Core & Coil only :	☐	

OPTIONS	Details
Temperature Indicator	☐ Dial Type ☐ Digital Type c/w 2 contacts 1 N.O. + 1 N.F. ☐ None
Provision for Fan Cooling	☐ Yes ☐ No ☐ Motor 120 volts a.c. fan kits not included Motor 120 volts a.c. (120 volts a.c. source not included)
Electro Static Shield	Between high and low voltage windings: ☐ Yes ☐ No
Lighting Arresters	☐ Distr. ☐ Interm. ☐ Station ☐ None
Grounding Resistor	☐ Yes ☐ No
Ground bus bar	☐ Standard 10.25 x 2.0 CU
Special Paint Color	☐ Yes ☐ No
Hinged Doors	☐ Yes ☐ No
Mechanical Interlock	☐ Yes ☐ No
Provision for Padlock	☐ Yes ☐ No
Epoxy Vacuum Impregnation	☐ Standard E.V.I.
Standard Production Test	Per IEEE / ANSI C57.12.91 / CSA C-9 ☐ Standard Included
Certified Test Report	☐ Standard Included
Instruction Manual	☐ Standard Included
Special Test	**Extra if required**
Heat Run Test	☐ Yes ☐ No
Noise Level Test	☐ Yes ☐ No
Basic Impulse Level	☐ Yes ☐ No
Corona Test	☐ Yes ☐ No
Notes and Special features :	

K-RATED TRANSFORMERS

The Non Linear Load Low cost Solution

All K-Rated transformers meet the most stringent industrial standards due to their optimal design, superior quality and ease of installation.

Applications

- Non Linear Loads
- Installation with dedicated ground
- Industrial Programmable Controllers (PLC)
- Protected Receptacles for Hospitals
- Protected Receptacles (orange)

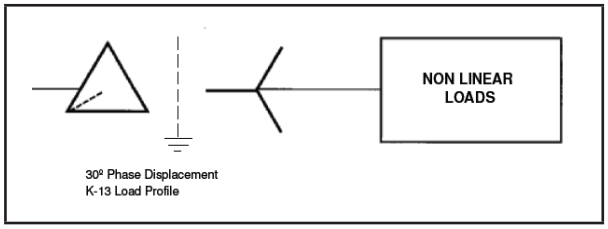
Features

- E.V.I. Process (Epoxy Vacuum Impregnation) at no additional cost
- Copper Windings
- Insulation Class 220
- 150ºC Temperature Rise
- High Quality Grain Oriented Steel Laminations
- Compact and easy to install enclosure
- Quiet Operations
- Neutral sized for twice the rated current
- Voltage of 600V to 208Y/120 V, 60 Hz, -Y, 3P, 4W
- 3 Coil construction
- Electrostatic Shield

Options

- Single or Double Oversized Electrostatic Shield
- TVSS
- Special Voltage
- 115ºC and 80ºC Temperature Rise

Typical Application



E.V.I. Plus-Value

- Superior Bonding & Mechanical Strength
- Core Losses Stability
- Better Heat Dissipation
- Reduced Noise
- Improved Winding Insulation
- Enhanced Protection in Contaminated Environments
- Elimination of Air Pockets

VARIABLE SPEED DRIVE TRANSFORMER

All variable speed drive transformers meet the most stringent industrial standards due to their optimal design, superior quality and ease of installation.

Applications

- AC and DC Variable Speed Drive
- Sillicon Controlled Rectifier
- Improved harmonic mitigation with multi-pulse configuration (6P, 18P, 24P, …)

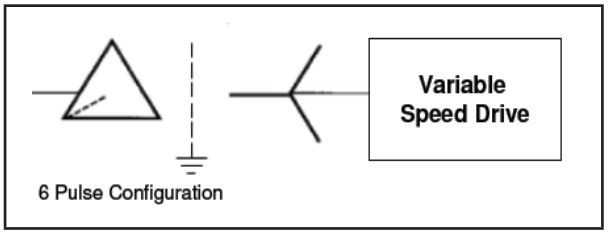
Features

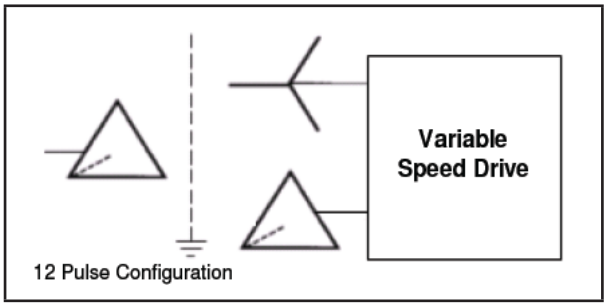
- E.V.I. Process (Epoxy Vacuum Impregnation)
- Primary Voltages of 600, 575, 480, 460, 240 or 230V
- 6 Pulse Secondary Voltages of 600, 575, 480, 460, 240, 230V Y
- 12 Pulse Secondary Voltages of 600, 575, 480, 460, 240 230V Y
- Copper Windings
- Insulation Class 220
- 150ºC Temperature Rise
- High-Quality Grain-Oriented Steel Laminations
- Type 3R Enclosure
- Electrostatic Shield
- Double Neutral

Options

- 115ºC and 80ºC Temperature Rise
- Thermal Switch with 1 or 2 N.C. contacts
- Open Type Core-Coil Construction
- Specific Phase Shirted Configuration for optimal harmonic mitigation
- Special Voltage

Typical Applications





E.V.I. Plus-Value

- Superior Bonding & Mechanical Strength
- Core Losses Stability
- Better Heat Dissipation
- Reduced Noise
- Improved Winding Insulation
- Enhanced Protection in Contaminated Environments
- Enhanced of Air Pockets

Quick Selector

Motor H.P.	Transformer kVA	Motor H.P.	Transformer kVA
6	7,5	75	93
7,5	11	100	118
10	14	125	145
15	20	150	176
20	27	200	220
25	34	250	276
30	40	300	330
40	51	400	440
50	63	500	550
60	75	600	660

MEDICAL EQUIPMENT TRANSFORMER

Medical imaging equipments are becoming more and more present in hospitals. To allow proper performance of this type of equipment. It is essential to provide a very low supply impedance, so low that even the transformer and equipment cable run makes a difference.

Installation of a transformer with standard features would not be adequate. Therefore Delta Transformers has been developing specific solutions for hospitals and their critical equipments.

What is needed to choose the proper transformer

- Capacity (kVA)
- Primary and Secondary Voltages required
- Maximum line to line impedance required by medical imaging equipment.
- Cable length and size from the power source to the transformer.
- Cable length and size from the transformer to the medical imaging equipment.

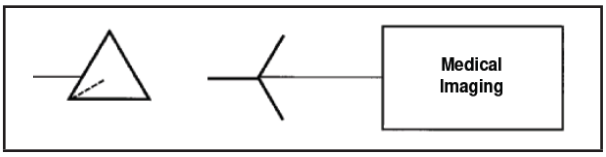
Features

- E.V.I. Process (Epoxy Vacuum Impregnation)
- Copper Windings
- Insulation Class 200
- 150ºC Temperature Rise
- High Quality Grain Oriented Steel Laminations
- Compact and easy to install enclosure
- Quiet Operation

Options

- 80ºC and 115ºC Temperature Rise
- Electrostatic Shield

Typical Application



E.V.I. Plus-Value

- Superior Bonding & Mechanical Strength
- Core Losses Stability
- Better Heat Dissipation
- Reduced Noise
- Improved Winding Insulation
- Enhanced Protection in Contaminated Environments
- Enhanced of Air Pockets

ELECTROSTATIC SHIELD

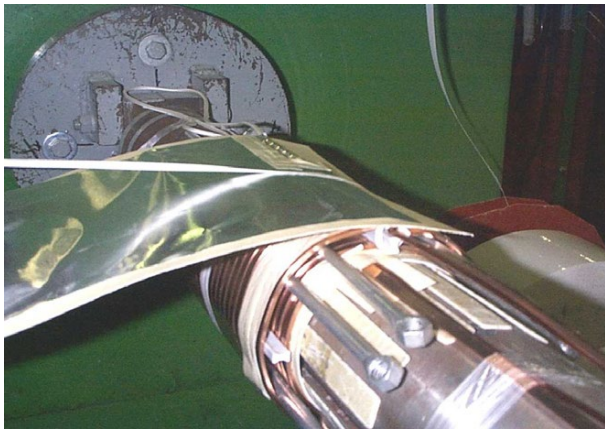
All Transformers used with Non Linear Loads application such as drive transformers, K-Rated transformers, Harmonic mitigation transformers should come with an electrostatic shield.

But what exactly is an electrostatic shield?

An Electrostatic Shield is a grounded metallic barrier provided between the primary and the secondary windings of an isolation transformer.

Applications

- Originaly used as an electrical barrier between primary and secondary windings of a power isolation transformer, so that the secondary side will be electrically isolated from fault occurring on the primary voltage system.
- These days, it will be commonly used to filter out, to very low values transient (High Frequency Common Mode Noise) present in distribution systems. Transients that are generated by contactors, high frequency variable speed drive, capacitor switching, H.I.D. lighting, computer power supply: basicaly all power electronic driven equipment.

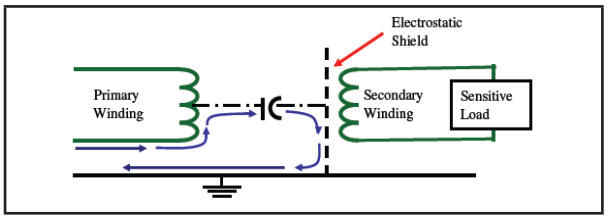


How does it work

A transformer is a device that uses electromagnetic induction to convert energy from an input system to the desired output at the same frequency. The challenge with transients is that they do not need the transformer iron core path to travel from one side to the other.

They travel using a path known as electrostatic action, using capacitive coupling between primary and secondary to ground.

Shielded Transformers



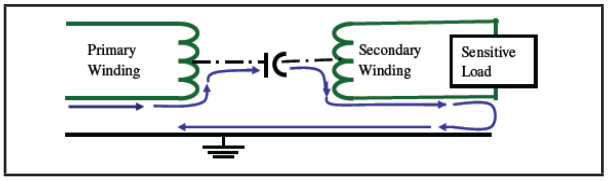
Attenuation

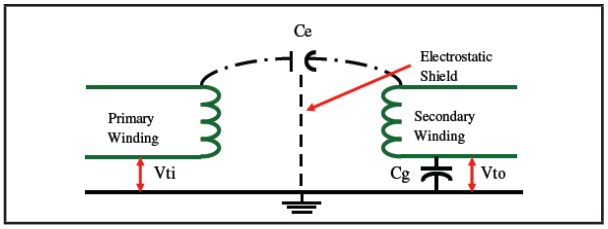
Vti	Vto	Ratio	CM Noise Attenuation (dB)
50	1	50:1	34
100	1	100:1	40
200	1	200:1	46
250	1	250:1	48*

$$\frac{Vti}{Vto} = \frac{Ce + Cg}{Ce}$$

* Level of attenuation usually obtained with 1-only standard electrostatic shield

Unshielded Transformer





NOISE LEVEL ANALYSIS

Transformer installation and noise

Noise in a transformer is basically caused by magnetostriction. This translates into a hum of twice the applied frequency. This inherent characteristic of the transformer cannot be completely eliminated. It is not uncommon to observe an increase of 10 to 20 dBA in an installation, and very often it is a lot harder to correct the situation after the fact. Location, combined with good practice often makes the difference, included, you will find a table of noise level vs kVA, a list of recommended practices to help you choose the right location, and tips for prior to putting the transformer into service.

kVA	Single-phase - Ventilated			Closed
	≤1.2 kV ≥ 1.2 kV ≤ 15 kV ≥15 kV ≤ 25 kV ≤ 15 kV 0-9			
	45	50	54	45
10-50	50	55	59	50
51-100	55	60	64	55
101-167	60	65	69	57
168-333	65	68	72	59
334-1000	68	68	72	61

kVA	Three-phase - Ventilated			Closed
	≤1.2 kV ≥ 1.2 kV ≤ 15 kV ≥15 kV ≤ 25 kV ≤ 15 kV 0-9			
	40	45	49	45
10-50	45	50	54	50
51-150	50	55	58	55
151-300	55	58	61	57
301-500	60	60	63	59
501-700	62	62	65	61
701-1000	64	64	67	63
1001-1500	65	65	68	64
1501-2000	66	66	69	65
2001-3000	68	68	71	66
3001-3750	71	71	74	68
2751-5000	73	73	76	70

These tables are based on CSA C9-02 standard. These values are used under maximun test conditions.

Choice of location and recommendations

- Avoid installations near sound reflecting surfaces.
- Avoid installations in narrow places or hallways.
- If possible, choose locations where sound would be least objectionable.
- If installation near sound reflecting surfaces cannot be avoided, be sure to use acoustic absorbing material between transformer and sound reflecting surface.
- Avoid any mechanical coupling to structure or equipment.
- Use of flexible conduct is highly recommended.
- Avoid installation on surfaces of relatively light mass like wood, tiles, masonry.
- Make sure the mass of installation surface is at least superior to the weight of the transformer.
- Install proper anti-vibration pads to avoid transmission of vibration to floor or mounting surface.
- Also refer to ANSI / IEEE C57.94-1982 : “RECOMMENDED PRACTICE FOR INSTALLATION, APPLICATION, OPERATION, AND MAINTENANCE OF DRY-TYPE GENERAL PURPOSE DISTRIBUTION AND POWER TRANSFORMERS”

Prior to putting the transformer into service:

Remove all shipping brackets located at top of units (when present).

- Loosen anchoring bolts so that rubber pads between transformer and enclosure are no longer over compressed.
- Select proper voltage tap to help reduce emitted noise.
- Verify overall assembly and screw tightness.
- Make sure the installation is level.

NOISE LEVEL ANALYSIS

# Reference : SC	Project :	Date :
# Order :		Delivery Date :

CLIENT	USER
Name and address	Name and address
Contact	**Contact**
Tel. :	Tel. :
Fax :	Fax :

Characteristics

# Catalogue :	KVA of the transformer :	KVA
# Model :	Primary :	V
# Serial:	Secondary :	V

Sound level measurement at 12 inches from the unit, half height of the unit, from 4 faces of unit if possible	Front	Left side	Back	Right side	
Sound level measurement at 18 inches from the unit, half height of the unit, from 2 faces of unit if possible	Front	Left side	Back	Right side	

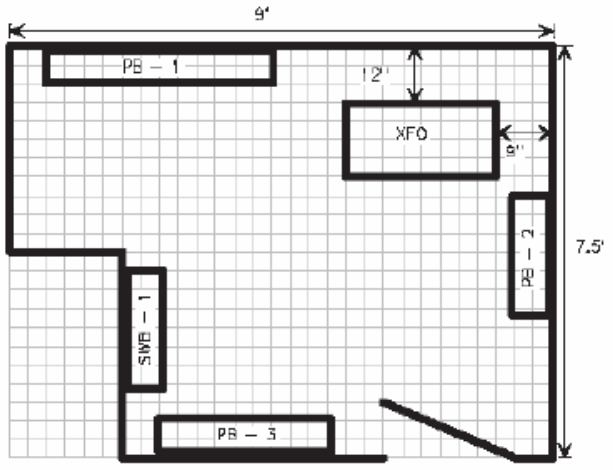
Any sound reflecting surface next to transformer?
Describe type of sound reflecting surfaces
Describe type of transformer mounting floor/pad/base.
Is the unit sitting on anti-vibration pads?
Is the unit sitting on a level floor/pad/base?
What type of noise: “Hum” or “Rattle”?
Feeling of any vibration on the enclosure or metallic parts?
Is the vibration transferred to conduit or adjacent equipment?
When applying pressure on any surface of enclosure does this change noise level?
When applying pressure on any surface of conduit or adjacent equipment does this change noise level?
Once front panel is removed, is the input voltage in accordance with selected voltage tap?
Same voltage tap on each winding?
What type of load is the unit feeding?
Any excessive tension between cables and terminations?
Shipping brackets located at the top of core & coil removed. Any change in noise?
Anti-vibration pads located between transformer & enclosure must not be compressed, loosen up the four anchoring bolts until no visible excessive compression on the pads. Any change in noise?
All screws, bolts, connectors and terminations of the assembly verified for tightness. Any change in noise?

Comments / Observations

NOISE LEVEL ANALYSIS

NOISE LEVEL ANALYSIS

EXEMPLE



TEMPERATURE LEVEL ANALYSIS

Transformer installation and temperature

During transformer voltage and current conversions, losses (core, conductor and eddy current losses) generate heat. Therefore, it is possible to feel heat near transformers. For security reasons, standards have established maximum allowable temperature rises.

The temperature rise of a transformer enclosure can reach 65°C maximum. Combined with a maximum ambient temperature of 40°C, enclosure surface temperature may attain 105°C. Hotspot temperature inside the transformer can reach 180°C at full load. Given ambient temperature, operating temperature can reach 220°C. Transformer insulation system is based on average temperature rise of conductors, ambient temperature and hotspot. At maximum temperatures, the system must be capable of withstanding 220°C.

It is important to note that the core and the top of the enclosure can reach maximum allowable temperatures even at no load. This situation is completely normal and is caused by losses in the core due to the presence of magnetic field once the transformer is energized.

Adequate ventilation is mandatory in order to control transformer temperature. When the transformer is installed in a confined area, proper ventilation will provide adequate ambient temperature. At all times, ambient temperature shall be less than 30°C nor exceed 40°C over a 24-hour period. Enclosure ventilation area is based on transformer KVA, heat losses in KW, height differential between inlet and outlet louvers and air temperature differential at inlet and outlet. Total area is designed to allow adequate ventilation of transformer and it must be kept free from any obstacles. No nearby object shall impede ventilation.

Recommendations on transformer location

- Never locate transformer near a source of heat.
- Area shall be well ventilated.
- Clearances required by Electrical Code and applicable standards shall be met.
- Power and load cables shall not obstruct enclosure louvers.
- Ambient temperature shall never exceed 40°C during transformer operation nor 30°C over a 24-hour period.
- Ensure regular maintenance to prevent louvers and transformer from being covered with dust.

TEMPERATURE LEVEL ANALYSIS

Service Call : SC | Project : | Date :

Order : | Delivery Date:

CLIENT

Name and address

USER

Name and address

Contact

Tel. :

Fax :

Contact

Tel. :

Fax :

Characteristics

# Catalogue :	KVA of the transformer :	KVA
# Model :	Primary :	V
# Serial :	Secondary :	V

Checking before panel removal

Does the transformer seem well ventilated?	☐ Yes	☐ No	Space: Front Back
Do the cables obstruct the enclosure ventilations?	☐ Yes	☐ No	
Is there excessive dust in the ventilation and windings grids?	☐ Yes	☐ No	Load Characteristics :
Is the transformer close to equipment which generates heat?	☐ Yes	☐ No	

Checking after panel removal

Record the temperatures when energized (infrared)	☐ Fill in the table below		Comments :
Verify all connection for tightness if hot spot(s)	☐ In accordance	☐ Not in accordance	
Position of cables vs coil air entrances / exits	☐ In accordance	☐ Not in accordance	

Monitored values (according to attached illustration)

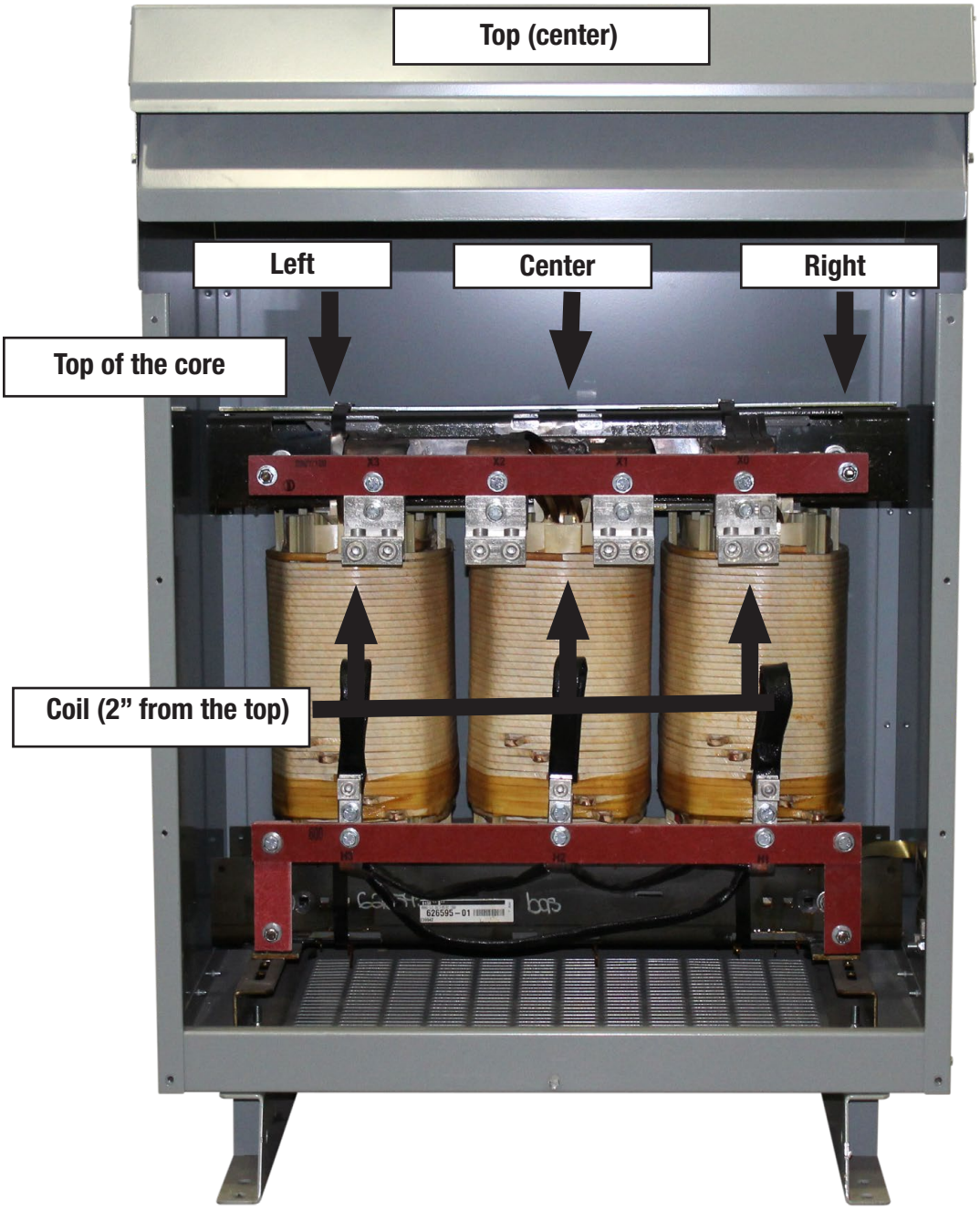
	Line 1		K-Factor	DHT (%)	Line 2		K-Factor	DHT (%)	Line 3		K-Factor	DHT (%)
Primary tension		V				V				V		
Primary current		A				A				A		
Secondary tension		V				V				V		
Secondary current		A				A				A		
Primary neutral current			A			Secondary neutral current					A	
Taps position												

Temperature	Ambiant	˚C	Top of the core right	˚C	Coil #1	˚C
(according to attached illustration)	Top (center)	˚C	Top of the core center	˚C	Coil #2	˚C
	Other :	˚C	Top of the core left	˚C	Coil #3	˚C

Comments / observations

TEMPERATURE LEVEL ANALYSIS

Pictures



ANTI-VIBRATION PADS

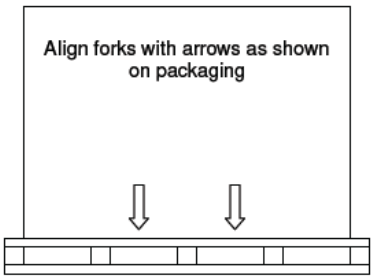
Anti-vibration pads installation

TYPICAL KIT

This anti-vibration pads kit is designed to attenuate the noise transmitted by the transformer vibration. The type of foot base indicated the appropriate model. See figure beside.

TRANSFORMER HANDLING

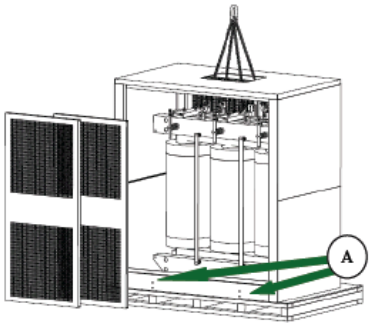
FORK LIFT

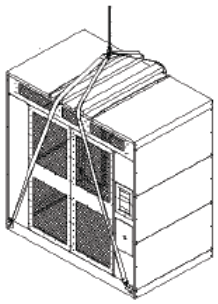


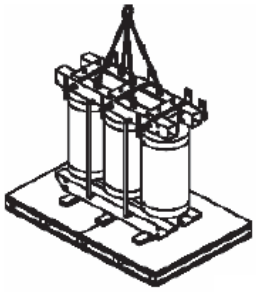
NEVER handle enclosure AND Core & Coil together by using enclosure lifting brackets

CRANE

SCENARIO 1:
When enclosure is bolted to Core & Coil (A):
Handle using the Core & Coil







SCENARIO 2:
When enclosure is NOT bolted to Core & Coil, 4 steps:

1- Unbolt enclosure from the pallet

2- Make sure to detach all wires or any other related links between the enclosure and the core & coil before step 3

3- Move enclosure using lifting brackets

4- Move Core & Coil

THE ADVANTAGES OF A «CAST COIL» WITHOUT THE INCONVENIENCES

Advantages of the Delta Transformers E.V.I. Process

INHERENTLY STRONG

The Delta Transformers E.V.I. design is inherently strong and self-supporting.

The Delta Transformers E.V.I. epoxy being highly flexible, it can endure thermal and mechanical stresses without cracking. In solid cast epoxy transformers, it is usually necessary to incorporate spring type pressure blocks and fiberglass reinforcements to combat stresses between components in order to minimize cracking.

ELECTRICAL

With the Delta Transformers E.V.I. design, as opposed to cast-coil, the epoxy resin is not part of the insulation system. Its function is purely mechanical: a great sealer to protect a great transformer. In fact, in the Delta Transformers E.V.I. the insulation media are Nomex® and air.

MECHANICAL

Both cast coil and Delta Transformers E.V.I. processes make use of epoxy as an environmental protection.

EPOXY ENCAPSULATION VS. EPOXY CASTING

In a cast epoxy transformer, the resin is the major part of the insulation system. In the Delta Transformers E.V.I. Nomex® and air are the insulation media; epoxy is used for its environmental protective properties only. The Delta Transformers E.V.I. gives improved performance since its encapsulation is not subject to cracking which is often related to solid epoxy casting.

NO CRACKS

The Delta Transformers E.V.I. process has totally eliminated the cracking problems which can occur in a solid cast insulation, due to temperature differentials through the thickness of Delta Transformers E.V.I' design, the epoxy is thick enough to provide environmental protection but thin enough that internal stresses do not develop. Since the coils are self-supporting, it enables us to use a flexible form of epoxy which will accommodate the expansion and contraction of the coil which it protects.

MULTIPLES ADVANTAGES

INSULATION STRESSED AT LESS THAN 1%

- Low stress design at nominal voltage, the solid Nomex® insulation is stressed at less than 1% of its surge rating.
- In the Delta E.V.I. insulation system, at nominal voltage, air provides insulation between sections, LV & HV windings and windings to ground. The Delta E.V.I. system relies on Nomex® only as turn to turn insulation: which, at nominal voltage, is stressed 20-30 volt per turn while its surge capacity is over 4,000 volt per turn and is therefore only stressed under surge conditions.
- This conservative approach virtually eliminates dielectric aging thus guaranteeing longer life.

L.V. BARREL WOUND 100% NOMEX® INSULATED (TURN TO TURN)

H.V. TO L.V. NOMEX® BARRIER

H.V. DISK WOUND 100% NOMEX® INSULATED (TURN TO TURN)

Air is the insulation between sections and between windings to ground.

QUALITY CONTROL

Since the Nomex® insulation system is independent of the Delta E.V.I. process; insulation quality can be checked during the manufacturing process. Formal quality control procedures are used to monitor the physical dimensions and the electrical integrity of the insulation during construction of the transformer. Every turn-to-turn, section-to-section and high-to-low barrier can be scrutinized; our design does not have to rely on a perfect cast for insulation performance. All results are documented.

DELTA E.V.I. AN INSULATION BONUS

Unlike the cast coil a Delta E.V.I. core/coil assembly would withstand all IEEE tests, including the impulse test, prior to the E.V.I. process. The epoxy coating adds dielectric strenght, but it is used primarily to provide enhanced environmental protection to the coils.

MULTIPLES AVANTAGES

THE DELTA E.V.I. EPOXY

THE DELTA E.V.I. power transformers are recommended for use in very humid and hostile environments.

Typical applications would be :

- automotive industry,
- pulp and paper mills,
- steel mills,
- water treatment plants,
- mines,
- chemical plants,
- cement plants,
- and other industrial locations where the atmosphere is especially humid, dirty and/or corrosive,
- including outdoor and marine applications such as shipyards and offshore drilling rigs.

The resin used is suitable for most environments and is an excellent moisture sealer. The Delta E.V.I. insulation system is recognized for Acnor (CSA) and UL class 220 applications. When applied under vacuum, it offers the best possible combination of performance features.

Delta Transformers Inc. has been using this epoxy resin, for over 10 years, on both Power & Distribution Transformers. It has proven its value both in laboratory tests and in field experience.

- Seals, coils and enhances performances of the Nomex® insulation by eliminating air pockets.
- Provides maxinum protection against moisture and contaminants.
- Adds high mechanical strength to the insulation by penetrating porous areas.
- Eliminates cracking because of its flexibility.
- Enables the basic design of the transformers to be easily modified to suit specific customer's requirements.
- Eliminates need for coil maintenance.
- Imposes no storage time limit.

REFERENCE LIST WARRANTIES

General Purpose Transformers 1 Phase 3-333 kVA, 150°C 480 V and 600 V Primary 120/240 V Secondary. Enclosure Type 1 and Type 2 3 Phase 6-600 kVA, 150°C 480 V and 600 V Primary 240Y/139 V or 208Y/120 V Secondary. Enclosure Type 3R	**10 years**
All others	**12 / 18 months***
Enviro-Guard 3 Phase 15-300 kVA, 115°C 480 V and 600 V Primary 208Y/120 V or 480Y/277 V Secondary. Enclosure Type 3R	**10 years**
All others	**12 / 18 months***
Commercial Series Transformers Auto Transformers Mini Power Transformers Special Transformers	**12 months***
Epoxy-potted Transformers	**10 years**

Non Linear Loads Transformers

K-Rated Transformers Variable Speed Drive Transformers Computer Application Isolated Transformers Super Isolated Transformers Zero Sequence Filters Transformers	**10 years**
Mitigator Series Transformers	**10 years**
Special Transformers	**12 months***

Power Transformers

Up to 15 MVA and 34.5 kv Class	**12 / 18 months***

Reactors

NOVA Reactors	**10 years**

Control Transformers

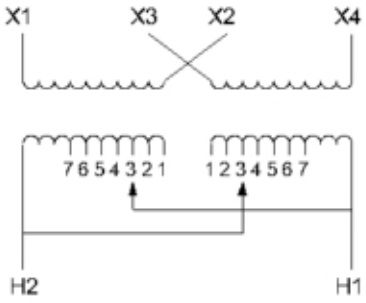
Orion & Atria Control Transformers	**15 years**

* 12 / 18 Months warranty: 12 months from energizing \ 18 months after shipment which ever date comes first.

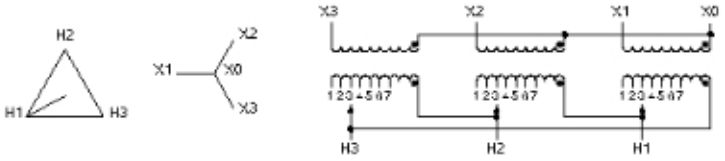
* Extended warranty available on request

ELECTRICAL SCHEMATICS DIAGRAMS

SINGLE PHASE



THREE PHASE



TERMS & CONDITIONS

GENERAL

The acceptance of our tender includes the acceptance of the following terms and conditions.

VALIDITY

Unless previously withdrawn, our tender is open for acceptance for the period stated, within thirty days only from the date hereof, and is subject to confirmation at time of such acceptance.

ACCEPTANCE

The acceptance of our tender must be accompanied by sufficient information to enable us to proceed with the order forthwith, otherwise we are at liberty to amend the tender prices to cover any increase in cost for items and details not comtemplated by our tender.

PACKING

Unless otherwise specified in our tender, packing in accordance with our standard practice is included.

LIMITS OF CONTRACT

Our tender includes only such goods, accessories and word as are specified herein.

DRAWINGS, ETC.

All descriptive and shipping specifications, drawings and particulars of weights and dimensions submitted with our tender are approximate only and the descriptions and illustrations contained in our catalogues, price lists and other advertisement matter are intended merely to present a general idea of the goods described therein and none of these shall form part of the contract. After acceptance of our tender, a set of certified outline drawings will be supplied free of charge if desired.

TESTS

Individual devices will receive standard insulation and other operation tests at point of manufacture. Any special test, or witness of tests required by you and which entails extra expenses to us shall be charged to you.

PERFORMANCE

You assume responsibility for the capacity and the performance of the goods being sufficient and suitable for your purpose.

DELIVERY

Delivery promises are approximate only and are based on prompt receipt by us of all necessary information. We will use our best endeavours to ship on the date given but will accept no liability for failure to do so.

SHIPMENT

Unless otherwise stated, all quotations are CPT point of shipment. In case where freight is allowed beyond the CPT point we will not accept liability or responsibility for any charges arising from the removal of the equipment from transport vehicles or equipment, nor for the setting up of the equipment at the site.

TERMS OF PAYMENT

Unless otherwise specified, Net 30 days.

STORAGE

It is understood that you shall arrange to take delivery of the goods upon advised notice after notification that the goods are ready for shipment. In the event of your not taking delivery, we are prepared, if our storage facilities permit, to store the goods at negotiated extra charge, until such time as the goods are shipped, subject to our rights and your authorization to invoice the goods when they are ready to go for storage. Any charges for storage or demurrage after dispatch must be invoiced on a monthly basis.

DAMAGE IN TRANSIT

We will not be responsible for loss or damage to goods beyond the point of shipment, nor shall we be under any obligation to give to you further notice, statutory or other, that we accept no responsibility. When bills of Lading are taking out by us, we will on your instructions and at your expense, insure against loss or other risk, and will, on receipt of your indemnity, take all reasonable steps to recover from the underwriters any loss or damage for which they may be liable.

TERMS & CONDITIONS

GENERAL LIABILITY AND WARRANTY

In lieu of any warranty, condition or liability implied by law, our liability in respect of any defect in or failure of the goods supplied, or for any loss, injury or damage attributable there to, is limited to making good by replacement or repair defects which under proper use appear therein to arise solely from our fault design, materials or workmanship within a period twelve calendar months after the original goods shall have been first dispatched, at the termination of which period all liability on our part ceases: provided always that such defective parts are promptly returned free to our place of manufacture unless otherwise arranged. The repaired or new parts will be delivered free of charge at our place of manufacture. In the case of goods not of our manufacture, you are entitled only to such benefits as we receive under any guarantee given to us in respect thereof. Save as in this clause herein before expressed, we shall be under no liability in contract, lost or otherwise for any person injury, howsoever caused by or resulting from anything done or omitted in connection with the goods or any work in connection therewith.

FORCE MAJEURE

We shall not be liable for any loss or damage resulting from causes beyond our reasonable control, including without limitation fire, strike civil or military authority, insurrection or riot, embargoes, car shortage, wrecks or delays in transportation, lack or failure of source of supply. Under reserve of the foregoing receipt of the apparatus by you shall constitute a waiver of all claims for loss or damage due to delay.

TERMS & CONDITIONS

MINIMUM BILLING: $250.00

For more information concerning Discount, Payment and Freight terms: refer to your "Delta Transformers Business Partners Policy". All applicable taxes are extra.

RETURNED GOODS POLICY:

Customer must obtain written authorization (RMA No.) from our Customer Service (1-800-663-3582). All returns sent without authorization will be refused.

STANDARD FREIGHT POLICY:

F.O.B., Point of shipment, freight prepaid, for shipments over $2,500, using standard dock level carrier's trailer to their furthest canadian terminal / destination. BEYOND DESTINATION and other transport methods extra.

ORDER CANCELLATION POLICY

ORDER CANCELLATION POLICY ENGINEERED PRODUCTS.

10% of order value after approval drawings have been issued to customer.

15% of order value after engineering release to production.

75% of order value after purchases of material.

100% of order value after production has commenced.

ORDER CANCELLATION POLICY STANDARD PRODUCTS.

25% of oder value after production has commenced.

RETURN POLICY APPLICABLE CHARGE

	Standard Transformers	Special Transformers
Customer error (without new order)	30%	100% non returnable
Customer error (with new order)	15%	100% non returnable
Estimated charges for repair	$150	$150

REPAIR COST INCLUDED:

Inspection evaluation	$100	$100
Plus: Labour & Material	When assessing	When assessing

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