



NRCAN - CSA C802.2 2018

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
- Provide hydrolytic stability under electrical stress, environmental contamination or abrupt temperature variation.

FEATURES

- High Efficiency compliant to NRCAN – CSA C802.2 2018 standards
- · As per UL-1446, class 220 insulation systems
- Superior thermal endurance
- · US 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, Division 2, Groups A, B, C and D Temperature code T3

APPLICATION

· Next generation of epoxy-potted transformer for needs beyond 75 kVA applications

Guard

• 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



Proud of our products, made in Canada.



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Technical Data

ENVIRO – GUARD®

YOUR CONSTRAINTS

- High cost transformer
- · Solvent rich varnish insulation systems
- · Heavy equipment
- Inherent low impedance design
- Design limited to 75 kVA max.

YOUR NEEDS

- Transformer suitable for harsh environment
- Design flexibility
- Ease of installation
- Cost effective equipment
- · Sealed core & coil

- Mechanical strength
- Impregnation integrity
- Noise reduction ability
- Efficient heat transfer rate
- Superior dielectric withstand

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)					Wei	Weight		
			Height Width		Depth						
										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
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





Typical Construction



Enviro-Guard



Weight Comparison @ 600V-120/208V, 115° C, Copper Windings

kVA	Expoxy-Potted kg	Enviro-Guard kg
6	79	54
9	95	75
15	137	98
30	227	148
45	340	185
75	609	301

Weight Reduction Benefits

- Lower transportation cost
- Ease of manipulation
- Lighter structural support

Superior Dielectric Withstand in Immersed Water Tank

Nominal Voltage

- 600V continuous
- 3 Phase, 60 Hz



Induced Voltage Test 1,200V (2 x Voltage Level)



SYNONYMOUS WITH QUALITY





Guide **Specification**

1. General

1.1 PRODUCT DATA

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

1.2 STANDARDS

- .1 Design, manufacture and test the dry-type transformers in accordance with industry-standard practices and in accordance with the following Standards:
 - .1 Air-cooled transformers.
 - .2 NRCAN CSA C802.2 2018, Minimum efficiency values for dry-type transformers.

2. Products

2.1 TRANSFORMERS

- .1 Transformers shall have the following characteristics.
- .2 Type: ANN.
- .3 KVA primary and secondary voltage as indicated.
- .4 Single or three phase, as indicated.
- .5 Delta connected primary for three phase transformers.
- Secondary winding shall be wye connected. .6
- .7 4 full capacity 2.5% adjustment taps, 2 below (FCBN) and 2 above (FCAN).
- Scott T connected three phase windings are .8 not acceptable.
- .9 Copper windings, 3 coil construction.
- .10 220 °C insulation class.
- .11 Transformers to pass continuous nominal voltage and induced voltage tests immersed into tap water tank.
- .12 115 °C temperature rise (80 °C available upon request).
- .13 Standard impedance.
- .14 Sound level: Max. 45dB up to 45 kVA, 50 dB from 75 to 150 kVA and 55 dB from 150 to 300 kVA. Other kVA per applicable standards.
- .15 Ventilated, 3-R weatherproof enclosure with grey finish.
- .16 Anti-vibration pads shall be used between the core and the enclosure.
- .17 Lifetime warranty at standard voltage applications.
- .18 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 pro cesses with periods under vacuum, followed by pressure impregnations using epoxy resin part of a class 220 as per UL-1446 Recognized Insulation Systems.

- .19 Transformers shall have nameplate indicating, but not restricted to the following:
 - .1 KVA rating
- .5 Insulation Class
- .2 Voltage rating

.4 Type

- .6 Temperature rise
- .7 Connection diagram
- .8 Serial number



.3 Impedance

2.2 OPTIONAL FEATURES

- Transformers suitable for hazardous location Class II or III, .1 Division 1 or 2, Temperature Code (T1 to T3), per Canadian Electrical Code CSA C22.1-02, at maximum nameplate KVA rating.
- K-rated as indicated with electrostatic shield. .2

2.3 MANUFACTURERS

- All transformers shall be of one manufacturer. Acceptable .1 manufacturers are:
 - Enviro-Guard[®] by Delta Transformers. .1
 - Or approved equivalent as per UL-1446 class 220 .2 epoxy resin impregnation process.

3. Execution

3.1 MOUNTING

- Floor or wall mount the dry-type transformers up to .1 75 kVA as indicated.
- Mount transformers 75 kVA and above, on floor. .2
- .3 Ensure adequate clearance around transformer for ventilation.
- Install transformers in level upright position. .4
- .5 Remove shipping supports only after transformer is installed and just before putting into service.
- Loosen isolation pad bolts until no compression is visible. .6
- .7 Supply and install anti-vibration dampers for wall or ceiling mounted transformers.
- .8 Make primary and secondary connections with flexible metal conduits.
- .9 Energize transformers as soon as possible after installation is completed.

3.2 EQUIPMENT IDENTIFICATION

.1 Provide equipment identification nameplates in accordance with Section 16104.

DELTA TRANSFORMERS Inc.



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