



THE CITY OF WINNIPEG

TENDER NO. 896-2021

NEWPCC UV TRANSFORMER REPAIR

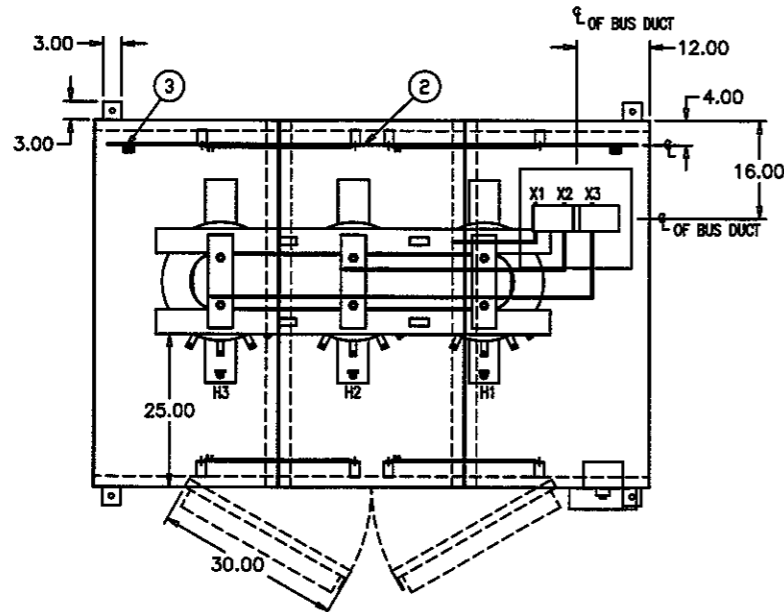
APPENDIX B

Transformer Shop Drawings

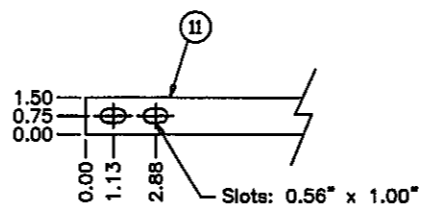
CITY OF WINNIPEG
NEWPCC SECONDARY EFFUENT
UV DISINFECTION FACILITY
Contract # 810585

Equipment Description:	1250 Kva Transformers 4000 Kva Transformers Test Reports
Manufacturer:	GE Industrial Systems
Agent:	Gescan
Address:	1451 St. James Street Winnipeg, Manitoba R3H 0W9
Telephone No.:	(204) 786-1481
Fax No.:	(204) 783-5326

Section	Specification Section & Clause	General Description
4	16322	1250 Kva Transformers 4000 Kva Transformers Test Reports

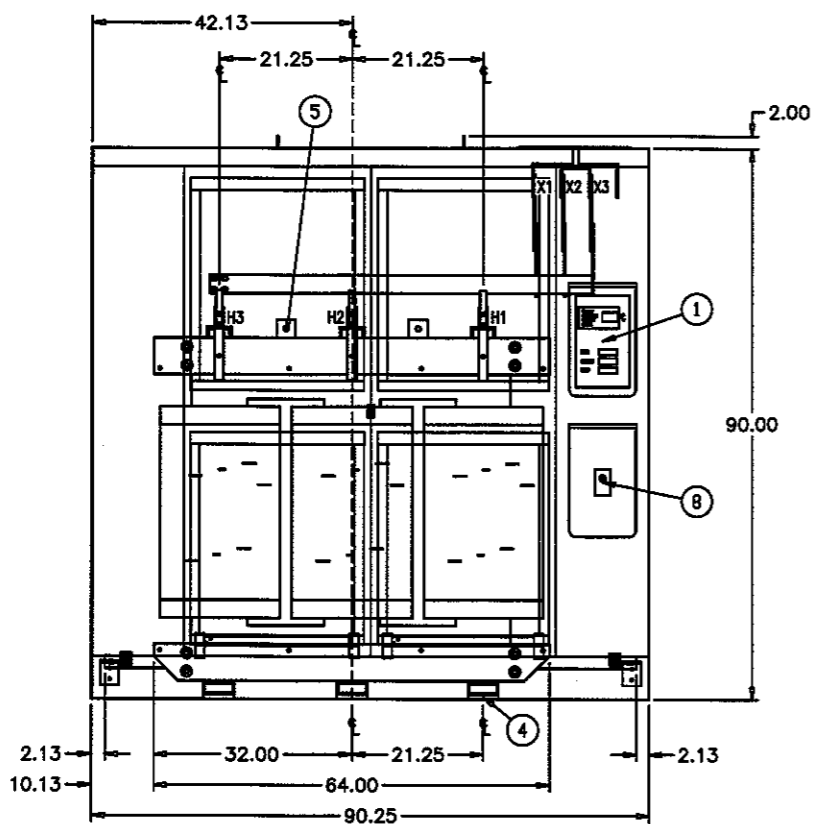


TOP VIEW

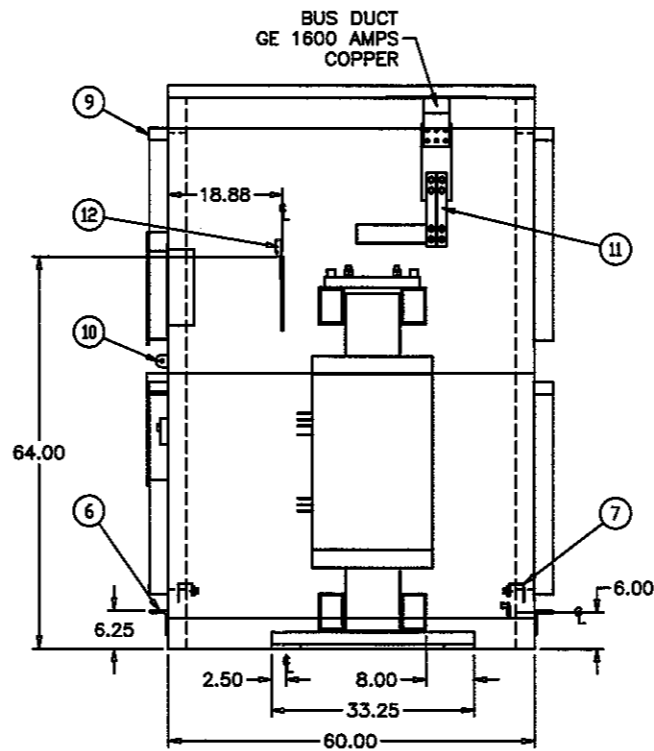


NOTE:

- 1- REFER TO DRAWING "PSG-165566" FOR NAMEPLATE DETAILS
- 2- MINIMUM AIR SPACE FROM ENCLOSURE TO WALL: FRONT: 70in. REAR: 12in.
- 3- 120 VOLTS AC POWER SOURCE OF ALL ACCESSORIES TO BE SUPPLIED BY OTHERS
- 4- EFFICIENCY AS PER STANDARD 'CSA C802.2-00' AT 50% LOAD AND AT 75°C: 98.95%
- 5- AN ANTI CONDENSATION PROTECTION (THERMO-FOIL DBB) WILL BE APPLIED TO THE INSIDE OF CEILING



FRONT VIEW



RIGHT SIDE VIEW

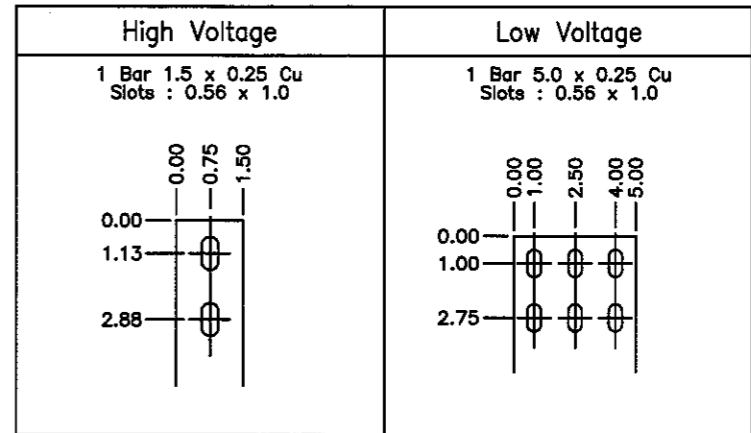
Technical Data

Estimated Values

No-load losses (Watts)	3610	% Efficiency (170°C)			
Load losses (Watts) (170°C)	14214	100 %	75 %	50 %	25 %
Total losses (Watts)	17823	98.59	98.78	98.87	98.58
Exciting current (%)	1.59	Regulation % (170°C) (At full load)			
Noise Level (dB)	65	1.0 P.F.	0.9 P.F.	0.8 P.F.	
		1.37	4.19	5.17	

Low Voltage Winding in : Copper High Voltage Winding in : Copper

Terminations



DRY TYPE TRANSFORMER
 KVA : 1250 ANN
 3 PHASES, 60 Hz
 IMPEDANCE AT 170°C : 7.00 %
 PRIM : 4160 VOLTS DELTA / 60 KV BIL
 SEC : 600Y/346 VOLTS / 10 KV BIL
 WEIGHT : 7450 lbs

TEMPERATURE RISE : 150°C
 INSULATION CLASS : 220°C
 4 ADJUSTMENT TAPS AT 2 1/2 %
 (2 FCAN AND 2 FCBN)
 CSA TYPE 3R VENTILATED ENCLOSURE
 C/W FRONT DOORS
 ASA-61 GREY FINISH

- 1- QUALITROL THERMOMETER MODEL 118 SERIES (180°C, 190°C, 200°C)
- 2- COPPER GROUNDING BAR (2.00 x 0.25)
- 3- GROUNDING CONNECTORS, 2 x 250 MCM ON EACH SIDE
- 4- ANTIVIBRATION NEOPRENE PADS
- 5- LIFTING EYELETS
- 6- ENCLOSURE LIFTING MEAN
- 7- 4 SPACE HEATERS (120 VOLTS, 500 WATTS)
- 8- SPACE HEATERS THERMOSTAT
- 9- FILTERS
- 10- PROVISION FOR PADLOCKING
- 11- 2 L.V. FLEXIBLE CONNECTORS (12.00 x 1.50 x 0.25) PER PHASE SUPPLIED BY TRANSFORMER MANUFACTURER
- 12- H.V. COMPRESSION LUGS (CUSTOMER TO SPECIFY SIZE AND QUANTITY)

The document was originally issued and authenticated by Marco Lessard, Eng. on September 26 2005. This copy should not be considered authenticated and cannot be used for the purpose of construction or manufacture as contemplated by the Engineers Act.

file: DE-165566.dwg
 All dimensions are in Inches
 Tolerance : +/- 0.25 Inch

<input checked="" type="checkbox"/> For Approval						
<input type="checkbox"/> For Information						
<input type="checkbox"/> Final Drawing	NO	REVISION	DATE	BY	APP'D	



GE Consumer & Industrial

Title		Customer	
LAYOUT DRAWING		GE CONSUMER & INDUSTRIAL	
1250 KVA, 5000 DELTA - 600Y/346		Order No	
Sc	Project	165566	
CITY OF WINNIPEG, NORTH END WATER POLLUTION		Drawing No	
		REV	
Drawn By	M. GAGNON	2005-09-26	DE-165566
Approved By	M. LESSARD	2005-09-26	0



Transformer

GE Consumer & Industrial

LOG-GE

DRY-TYPE TRANSFORMER / TRANSFORMATEUR TYPE SEC

GENERAL MOD. # **E-CRTC1250 S004837-001**

CAT. #

Distinct Mod. # **CRTC1250 S004837**

kVA **1250** ANN at/à **150** °C Temp. Rise
Élev. Temp.

kVA at/à °C

kVA at/à °C

PRI. **4160** **60** kV BIL

SEC. **600Y/346** **10** kV BIL

IZ **7.00** % at/à **170** °C at/à **1250** kVA

Phase **3** Hz **60** Class **220**

Refer. **165566** Enclosure **3R**

Serial

Year **2005**

Diagram **WD-312P-S4837**

Weight **C&C 6271 lbs**

Total **7450 lbs**

ID **LOG-GE**

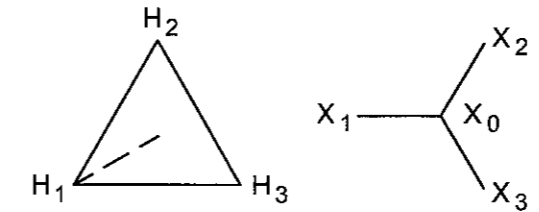
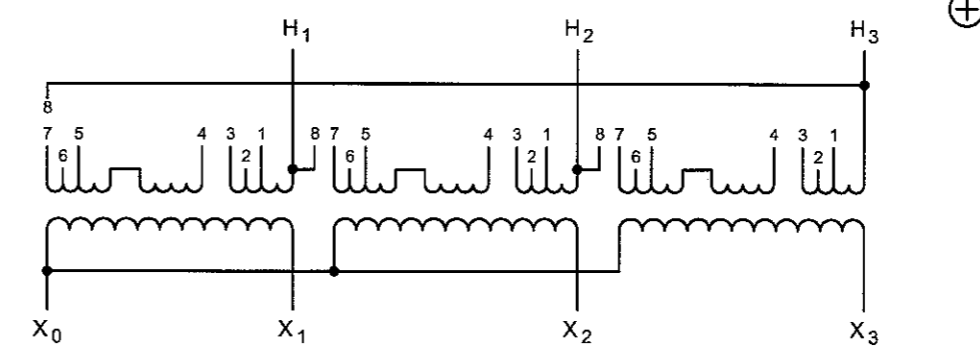


EFFICIENCY PER CSA C802.2-00
EFFICACITÉ SELON CSA C802.2-00



LR 53763

MOD-STD



	Pos.	Volts	Amps	at/à
PRI.	---	---	---	1250 kVA
	4-3 / 8-7	4368	165.3	
	4-2 / 8-7	4264	169.3	
	4-2 / 8-6	4160	173.5	
	4-1 / 8-6	4056	178.0	
SEC.		600Y/346	1203	

Diagram **WD-312P-S4837**

WD-312P

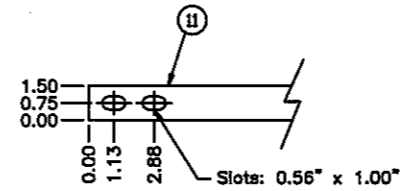
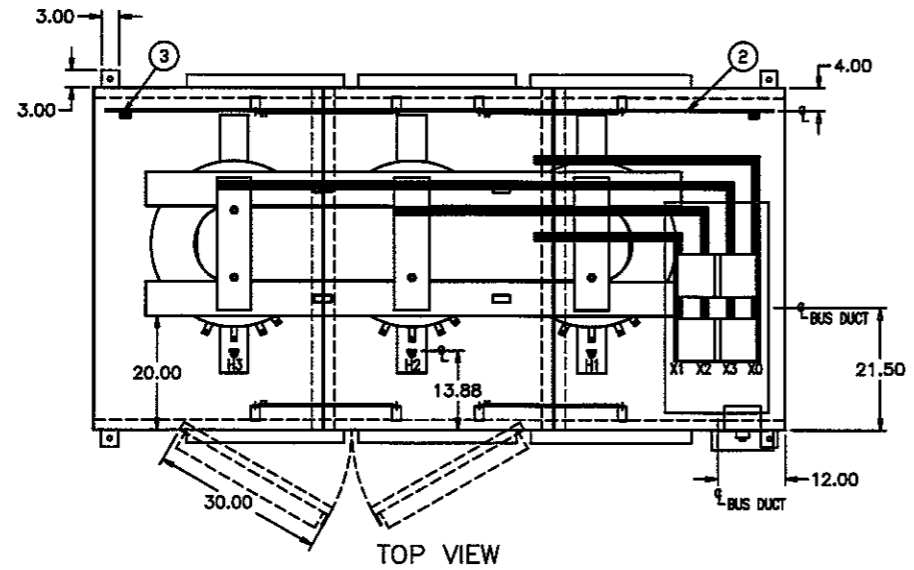
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WIDTH 10.00 IN.

DIMENSIONS : HAUTEUR 6.25 PO.
LARGEUR 10.00 PO.

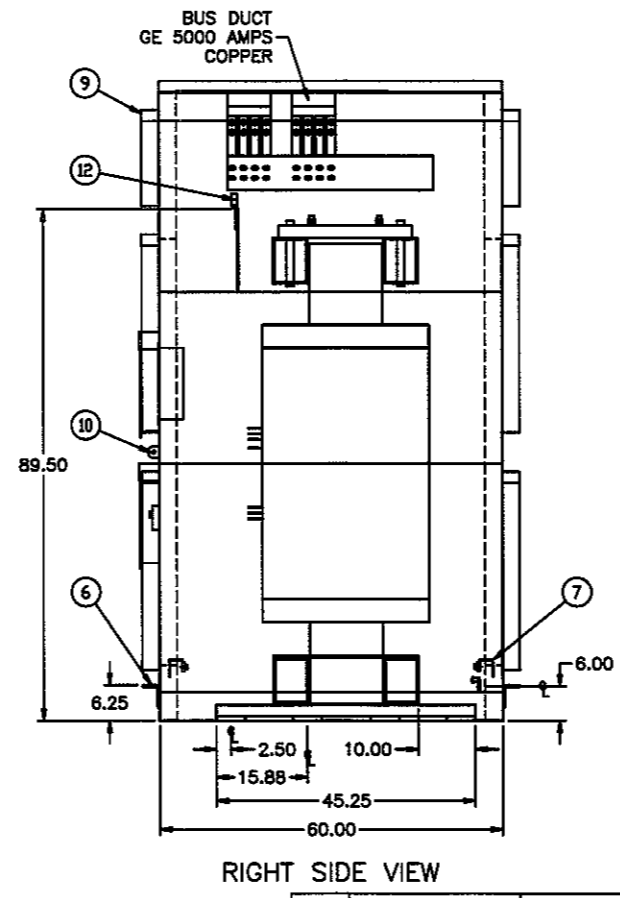
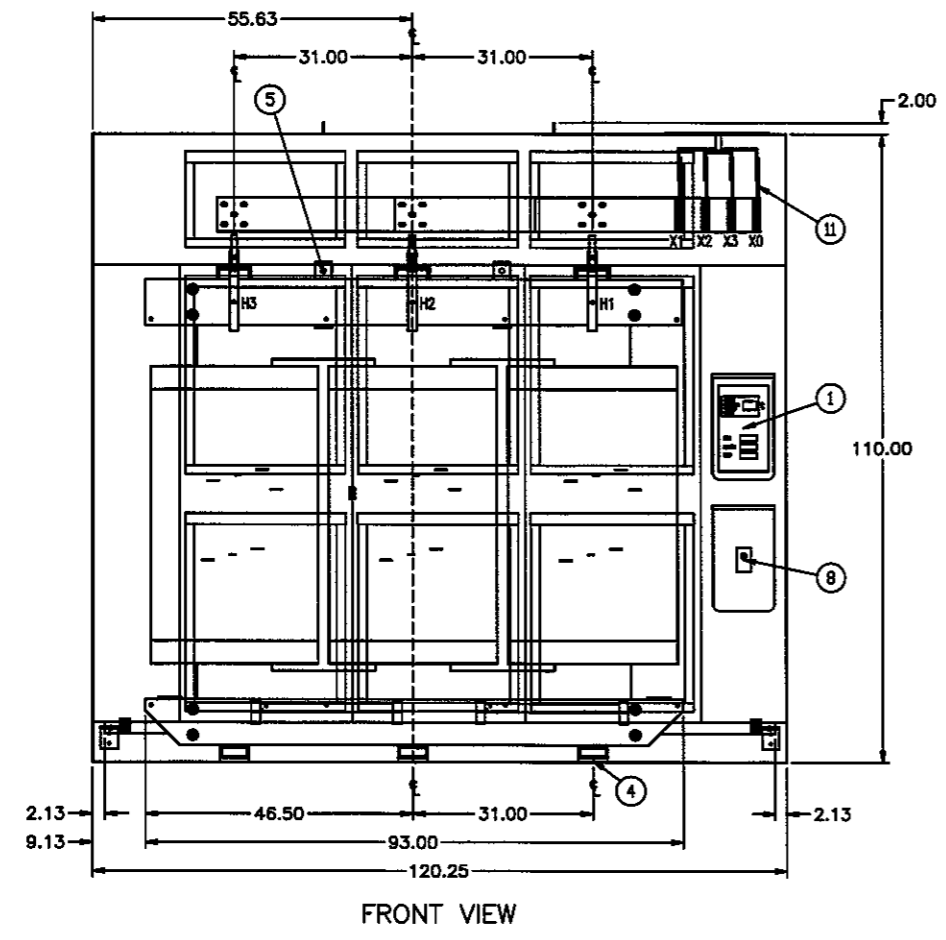
IMPEDANCE BETWEEN DRAWING AND NAMEPLATE MAY DIFFER. MESURED IMPEDANCE VALUE WILL BE INDICATED ON NAMEPLATE ACCORDING TO PRODUCTION TEST RESULTS. REGARDING THIS MEASUREMENT IMPEDANCE VALUE, NO REVISED DRAWING WILL BE SENT.

LA VALEUR DE L'IMPÉDANCE INDIQUÉE SUR CE DESSIN EST ESTIMÉE. LA VALEUR QUI SERA INDIQUÉE SUR LA PLAQUE SIGNALÉTIQUE SERA LA VALEUR RÉELLE DE L'IMPÉDANCE CALCULÉE À PARTIR DES MESURES PRISES LORS DES ESSAIS ÉLECTRIQUES EFFECTUÉS SUR LE TRANSFORMATEUR. AUCUNE RÉVISION DE DESSIN NE SERA ENVOYÉE ULTÉRIEUREMENT POUR INDIQUER LA VALEUR RÉELLE DE L'IMPÉDANCE.

NB PIECE(S) / UNITE PART(S) QTY / UNIT	--	SUJET / SUBJECT:	PLAQUE SIGNALÉTIQUE NAMEPLATE			CODE :	PSG-165566	
GAUGE / GAGE	--		1250 KVA, 3Ø CITY OF WINNIPEG, NORTH END WATER POLLUTION			<h2>Transformer</h2> <p>GE Consumer & Industrial</p>		
REV. NO	DATE	PAR / BY	DESS. PAR / DRAWN BY:	M.G.	DATE			2005-09-26
0	2005-09-26	M.G.	APPR. PAR / APP'D BY:		DATE			



- NOTE:
- 1- REFER TO DRAWING "PSG-165567" FOR NAMEPLATE DETAILS
 - 2- MINIMUM AIR SPACE FROM ENCLOSURE TO WALL: FRONT: 70in. REAR: 12in.
 - 3- 120 VOLTS AC POWER SOURCE OF ALL ACCESSORIES TO BE SUPPLIED BY OTHERS
 - 4- THE NEUTRAL BUS BAR (X0) IS CONNECTED TO THE GROUND BAR BY A 3/0 AWG CABLE
 - 5- AN ANTI CONDENSATION PROTECTION (THERMO-FOIL DBB) WILL BE APPLIED TO THE INSIDE OF CEILING



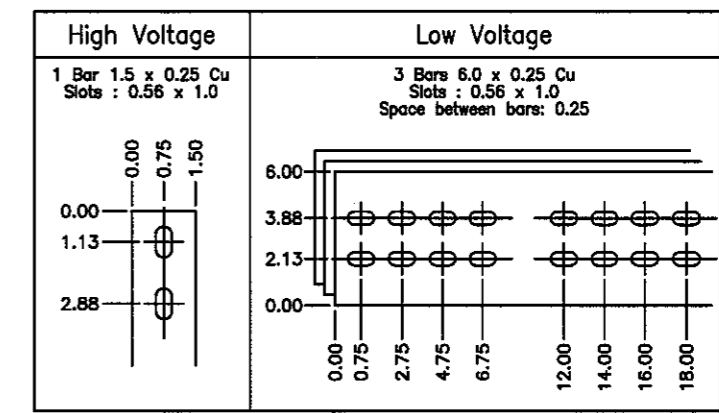
Technical Data

Estimated Values

No-load losses (Watts)	9900	% Efficiency (170°C)			
Load losses (Watts) (170°C)	52300	100 %	75 %	50 %	25 %
Total losses (Watts)	62200	98.47	98.71	98.86	98.70
Exciting current (%)	1.28	Regulation % (At full load) (170°C)			
Noise Level (dB)	69	1.0 P.F.	0.9 P.F.	0.8 P.F.	
		1.58	4.57	5.60	

Low Voltage Winding in : Copper High Voltage Winding in : Copper

Terminations



DRY TYPE TRANSFORMER
 KVA : 4000 ANN
 3 PHASES, 60 Hz
 IMPEDANCE AT 170°C : 7.50 %
 PRIM : 4160 VOLTS DELTA / 60 KV BIL
 SEC : 480Y/277 VOLTS / 10 KV BIL
 WEIGHT : 18751 lbs
 THIS UNIT IS COMPATIBLE WITH A LOAD PROFILE HAVING A K-FACTOR UP TO 13.

TEMPERATURE RISE : 150°C
 INSULATION CLASS : 220°C
 4 ADJUSTMENT TAPS AT 2 1/2 % (2 FCAN AND 2 FCBN)
 CSA TYPE 3R VENTILATED ENCLOSURE
 C/W FRONT DOORS
 ASA-61 GREY FINISH

- 1- QUALITROL THERMOMETER MODEL 118 SERIES (180°C, 190°C, 200°C)
- 2- COPPER GROUNDING BAR (2.00 x 0.25)
- 3- GROUNDING CONNECTORS, 2 x 250 MCM ON EACH SIDE
- 4- ANTIVIBRATION NEOPRENE PADS
- 5- LIFTING EYELETS
- 6- ENCLOSURE LIFTING MEAN
- 7- 4 SPACE HEATERS (120 VOLTS, 500 WATTS)
- 8- SPACE HEATERS THERMOSTAT
- 9- FILTERS
- 10- PROVISION FOR PADLOCKING
- 11- 8 L.V. FLEXIBLE CONNECTORS (12.00 x 1.50 x 0.25) PER PHASE SUPPLIED BY TRANSFORMER MANUFACTURER
- 12- H.V. COMPRESSION LUGS (CUSTOMER TO SPECIFY SIZE AND QUANTITY)

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file: DE-165567.dwg
 All dimensions are in inches
 Tolerance : +/- 0.25 Inch

<input checked="" type="checkbox"/> For Approval <input type="checkbox"/> For information <input type="checkbox"/> Final Drawing								GE Consumer & Industrial	
NO REVISION DATE BY APP'D				Drawn By M. GAGNON 2005-09-27 Approved By M. LESSARD 2005-09-27		Title LAYOUT DRAWING 4000 KVA, 5000 DELTA - 480Y/277 Sc --- Project CITY OF WINNIPEG, NORTH END WATER POLLUTION Customer GE CONSUMER & INDUSTRIAL Order No 165567		Drawing No DE-165567 REV 0	



Transformer

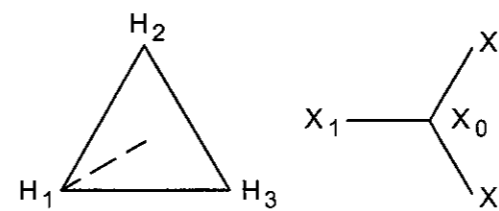
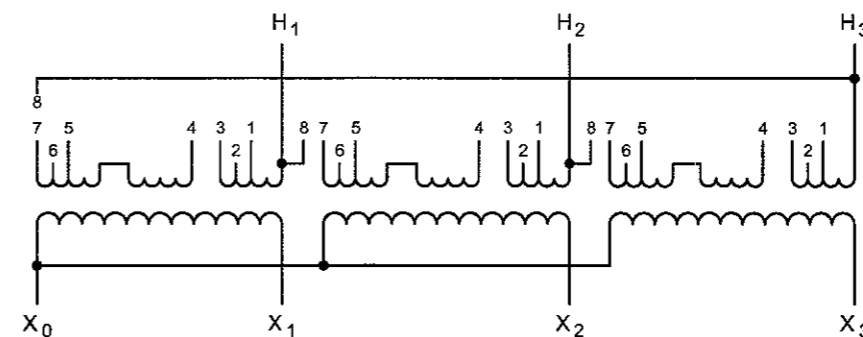
GE Consumer & Industrial

LOG-GE

DRY-TYPE TRANSFORMER / TRANSFORMATEUR TYPE SEC

CAT. #	<input type="text"/>		
Distinct Mod. #	CRTC4000 S004838		
kVA	4000	ANN	at/à 150 °C Temp. Rise Élev. Temp.
kVA	<input type="text"/>	at/à	<input type="text"/> °C
kVA	<input type="text"/>	at/à	<input type="text"/> °C
PRI.	4160	60	kV BIL
SEC.	480Y/277	10	kV BIL
IZ	7.50 %	at/à 170 °C	at/à 4000 kVA
Phase	3	Hz 60	Class Classe 220
Refer. Référ.	165567	Enclosure Boîtier	3R LR 53763
Serial Série	<input type="text"/>	Weight Poids	C&C 17091 lbs
Year Année	2005	Total	18751 lbs
Diagram Schéma	WD-312P-S4838	ID	LOG-GE

MOD-STD-SLE



	Pos.	Volts	Amps	at/à
PRI.	---	---	---	4000 kVA
	4-3 / 8-7	4368	528.8	
	4-2 / 8-7	4264	541.7	
	4-2 / 8-6	4160	555.2	
	4-1 / 8-6	4056	569.4	
SEC.	4-1 / 8-5	3952	584.4	480Y/277
		480Y/277	4811	

Diagram Schéma

WD-312P

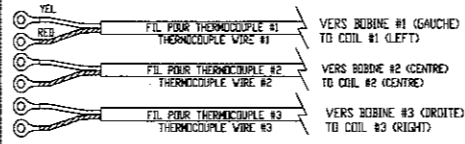
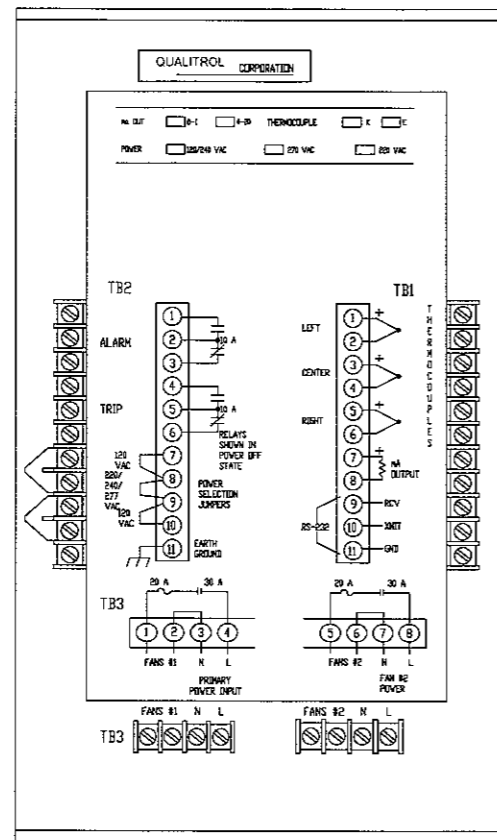
DIMENSIONS : HEIGHT 6.25 IN.
WIDTH 10.00 IN.

DIMENSIONS : HAUTEUR 6.25 PO.
LARGEUR 10.00 PO.

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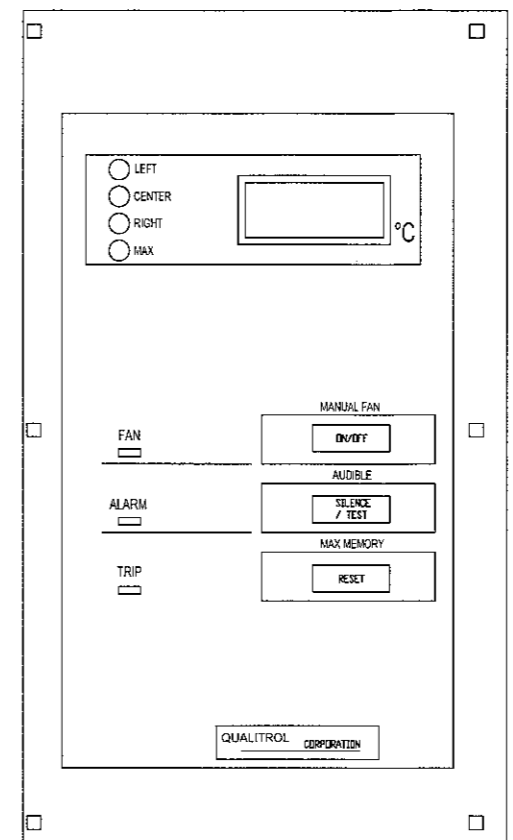
LA VALEUR DE L'IMPÉDANCE INDIQUÉE SUR CE DESSIN EST ESTIMÉE. LA VALEUR QUI SERA INDIQUÉE SUR LA PLAQUE SIGNALÉTIQUE SERA LA VALEUR RÉELLE DE L'IMPÉDANCE CALCULÉE À PARTIR DES MESURES PRISES LORS DES ESSAIS ÉLECTRIQUES EFFECTUÉS SUR LE TRANSFORMATEUR. AUCUNE RÉVISION DE DESSIN NE SERA ENVOYÉE ULTÉRIEUREMENT POUR INDIQUER LA VALEUR RÉELLE DE L'IMPÉDANCE.

NB PIECE(S) / UNITE PART(S) QTY / UNIT	--	SUJET / SUBJECT:	PLAQUE SIGNALÉTIQUE NAMEPLATE 4000 KVA, 3Ø CITY OF WINNIPEG, NORTH END WATER POLLUTION			CODE :	PSG-165567	
GAUGE / GAGE	--					<h1>Transformer</h1> <p>GE Consumer & Industrial</p>		
REV. NO	DATE	PAR / BY	DESS. PAR / DRAWN BY:	M.G.	DATE			2005-09-27
0	2005-09-27	M.G.	APPR. PAR / APP'D BY:		DATE			




MONITEUR DE TEMPERATURE VUE ARRIERE
 TEMPERATURE MONITOR REAR VIEW

MONITEUR DE TEMPERATURE VUE AVANT
 TEMPERATURE MONITOR FRONT VIEW



NOTE: IDENTIFIER LA FILERIE A L'AIDE DE MARQUEURS ELECTROVERT TYPE Z. POUR LES THERMOCOUPLES, DEBUTER L'IDENTIFICATION PAR LA LETTRE T (EXEMPLE: POUR LA BOBINE DE GAUCHE (#1), L'IDENTIFICATION SERA T1).

NOTE: MARK THE WIRES WITH ELECTROVERT TYPE Z MARKERS. FOR THE THERMOCOUPLES, START THE IDENTIFICATION WITH THE LETTER T (EXAMPLE: FOR THE LEFT COIL (#1) THE IDENTIFICATION WILL BE T1).

NB PIECE(S) / UNITE PART(S) QTY / UNIT		--	SUJET / SUBJECT: DIAGRAMME DE FILERIE WIRING DIAGRAM				CODE :	DFIL-QUAL118
GAUGE / GAGE		--	QUALITROL 118				 GE Industrial Systems	
REV. NO	DATE	PAR / BY	DESS. PAR / DRAWN BY:	M.G.	DATE	02-03-07		
1	02-03-07	M.G.	APPR. PAR / APP'D BY:		DATE			