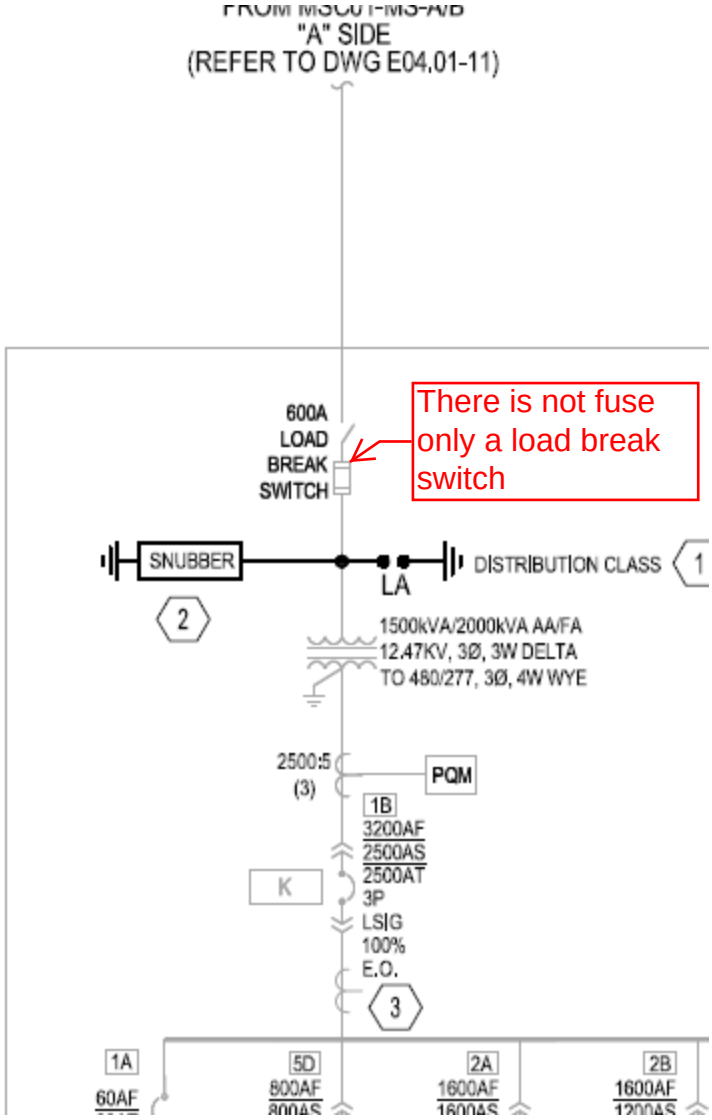

FROM MSC01-MS-A/B
"A" SIDE
(REFER TO DWG E04.01-11)
600A
LOAD
BREAK
SWITCH
There is not fuse only a load break switch
SNUBBER
LA
DISTRIBUTION CLASS
1
2
1500kVA/2000kVA AA/FA
12.47KV, 3Ø, 3W DELTA
TO 480/277, 3Ø, 4W WYE
2500:5
(3)
PQM
1B
3200AF
2500AS
2500AT
3P
LSIG
100%
E.D.
K
3
1A
60AF
5D
800AF
2A
1600AF
2B
1600AF

[redacted]

CERTIFIED TRANSFORMER TEST REPORT

[redacted]

[redacted]

3 Phase 60 Hertz Coolant-Air

Winding High Voltage
1500.0 KVA
12470 Volts Delta

Sub/Phase Polarity
Winding Low Voltage
1500.0 KVA
480 Volts Wye

TAPS: 13094 12782 12470 12158 11847

Resistance, losses, impedance, and regulation corrected to 135 degree C and are based on wattmeter measurements unless otherwise stated. The resistance for 3 phase transformers is the sum of the 3 phases in series.

Test Date	Resistance (Ohms) H.V.	L.V.	1500.0 KVA %Exc Amps	NoLoad Loss	Load Loss	12470 to 480 %Imp	%R	%X	X/R
10/21/2011	4.2779	.00172	.7686	3447	13493	6.17	0.90	6.10	6.78
				TOTAL LOSS					
Average			0.77	3447	16940				
Guarantee						5.75			

Regulation

PF	100%	90%	85%	80%	75%
	1.084	3.597	4.088	4.474	4.789

Temperature rises based on data taken from test of similar design. Average rise in degree C.

Winding Rise by Resistance

Load	H.V.	L.V.	Guar
100%	94.00	83.00	115.00
133%	115.00	115.00	115.00

Insulation Test

Applied Potential Test:

Winding	Rated Volts	Test Volts Applied	Duration of Test
H.V.	12470	34.0 KV	60 Sec
L.V.	480	3.0 KV	60 Sec

Induced Potential test: two times 480 volts at 400 hertz for 7200 cycles

Ratio Test Results

Tap	Phase A	Phase B	Phase C	Calc.	HV (Ohm)	Load Loss(W)	%Z
13094	47.249	47.245	47.255	47.249			
12782	46.177	46.171	46.177	46.123			
12470	45.031	45.026	45.036	44.997	4.2779	13493	6.17
12158	43.957	43.955	43.964	43.871			
11847	42.743	42.742	42.748	42.749			

Phase Relationship and Polarity Test
Angular Displacement(LV-HV)
-30 Degrees (DYN1)

Efficiency

125%	100%	75%	50%	25%
98.69	98.87	99.02	99.09	98.86

Remarks:
1) THERMAL DATA TAKEN FROM DS88490001.
2) GUARANTEED IMPEDANCE ON NOMINAL TAP IS 5.75% MINIMUM.

UNIT SUCCESSFULLY PASSED QC IMPULSE TEST

I hereby certify that this is a true report based on factory tests made in accordance with the latest IEEE C57.12.01 & C57.12.91 test code and that each transformer withstood the insulation tests.

10/24/2011 approved:

ABB	QUALITY ASSURANCE PROCEDURES Small Power Transformers Bland, VA	Number: QCT1A Page: 1 of 1 Issue Date: 9/1/83 Revision No: 17 Revision Date: 07/02/02
Title: TEST REQUEST – Vent		

S.O. #: 90525,90529 Ref #:PAWE P.O. #:_____
End User/Sold To:_____ /_____
Type - kVA - Rise: AA - _____ - _____ / _____ - _____ - _____ / _____ - _____ - _____
Vector Group(VDE):DY1

GUARANTEED VALUES

Losses: NL:_____ LL:_____ TL:_____
Regulation: @1.0 PF_____ @0.9 PF_____ @0.8 PF_____ @0.7 PF_____ Sound:_____ AA _____ FA
Reference Thermal Data: HV _____ / _____ / _____ LV _____ / _____ / _____
Impedance: 5.75 % IZ MINIMUM
Other: _____

	REQ	DONE	CTR		QAP Ref.	NOTES:
1	X	✓	X	Turns Ratio	QAP 11.1	
2	☐		☐	Heated & Vacuum		
3	X	✓	☐	Megger **500** V	QAP 11.6	
4	X	✓	X	Resistance	QAP 11.3	
				Tap **Extremes** on 1 unit(s)		
				Expected: HV 0.668528 LV 0.000819		± 10 %
5	X	✓	X	Angular Displacement	QAP 11.2	
6	☐		X	Commutating Reactance	QAP 11.17	
7	☐		X	Zero Sequence Impedance		
8	X	✓	X	Impedance and Load Losses	QAP 11.4	
				Expected LL (Hot) Min 12849 Max 16907		
				Tap **Extremes** on 1 unit(s)		
9	X	✓	X	Core Loss & Excitation	QAP 11.5	
				Expected NL: Min 2324 Max 3486		
10	☐		☐	Corona Test before dielectrics	QAP 11.15	
11	X	✓	☒	Impulse Test **100% QC**	QAP 11.9	
12	X	✓	X	Applied Potential	QAP 11.10	
13	X	✓	X	Induced Potential	QAP 11.11	
14	☐		X	Corona Test after dielectrics	QAP 11.15	
15	☐		☐	Power Factor	QAP 11.7	
16	☐		X	Switch & Soak	QAP 11.13	
17	X	✓	X	Applied Potential - Controls	QAP 11.10	
18	☐		X	Temperature Test	QAP 11.8	2
19	☐		☐	Audible Sound Level	QAP 11.12	
20	☐		☐	Primary Switch		

Notes: 1. DOE 99.12%
2. PROVIDE THERMAL DATA FROM DS88490001 AND RECORD ON CTR.

83
94

**IMPULSE TEST - CONNECT RESISTORS (PROPERLY SIZED) TO PHASES OF WINDINGS NOT
**UNDER TEST [IF WINDING HAS NEUTRAL THEN SOLIDLY GROUND]

Engineer:PBW 8/27/11 Approval:HBC 8/29/11 Tested By: 10/21/11

ABB POWER T&D COMPANY, INC.

Date : 8/27/2011

Quality Assurance Test Sheet   Qct-02   Form Revision: 08 - 02/03/99

SO Range: 90525 THRU   KVA: 1500

HV Phase Voltage : 12470
HV Turns (Max) : 661

LV Phase Voltage : 277.13
LV Turns : 14

FCAN (2) @ 2.5 %   FCBN (2) @ 2.5 %

Tap I-D	Tap Volts	MIN Ratio	MAX Ratio	Meas. Coil#1	Meas. Coil#2	Meas. Coil#3	Meas. Avg.	Calc'd Volts
A	13093.5	47.0109	47.4833	47.249	47.245	47.255		
B	12781.7	45.8914	46.3526	46.177	46.171	46.177		
C	12470	44.7723	45.2222	45.031	45.026	45.039		
D	12158.3	43.6531	44.0918	43.957	43.955	43.964		
E	11846.5	42.5336	42.9611	42.743	42.742	42.748		
F								
G								
J								
K								
L								

DATE 6-27-11
DUE 6-27-12

Test Set Id No: 10452165
Checked By: [illegible]   Date : 10-14-11
Ok'd For Assy By: [illegible]   Date : 10-14-2011

Remarks:

90529001

QUALITY ASSURANCE PROCEDURES
Small Power Transformers
Bland, VA

Number: QCT 20A
Page: 1 of 1
Issue Date: 09/01/91
Revision No. 3
Revision Date: 04/12/(

TITLE: STANDARD TEST DATA SHEET (MAIN LAB)

SHOP ORDER NO. DS90529001 DESIGN: 90525

INSULATION RESISTANCE:

TEST VOLTAGE: 500 (DC)
HV: 10000 MΩ LV: 10000 MΩ CORE: N/A MΩ
BY: DM DATE: 10/21/11 EQUIPMENT ID: 10452024 (DUE 10/21/11)

WINDING RESISTANCE:

HV WINDING - (NOM TAP),	AMB: 19.8 °C	R1-R2: 0.6539	R2-R3: 0.6543	R3-R1: 0.6546
HV WINDING - (MAX TAP),	AMB: °C	R1-R2:	R2-R3:	R3-R1:
HV WINDING - (MIN TAP),	AMB: °C	R1-R2:	R2-R3:	R3-R1:
LV WINDING #1	AMB: 19.3 °C	R1-R2: .0007729	R2-R3: .0007973	R3-R1: .0008026
LV WINDING #2	AMB: °C	R1-R2:	R2-R3:	R3-R1:

BY: DM DATE: 10/21/11 EQUIPMENT ID: 10452028 (6/14/2012), 10452030 (6/15/2012), 10488749 (DUE 6/9/12), 10512284 (DUE 6/9/12), 10743614 (DUE 5/16/12), 10743616 (DUE 5/16/12)

POLARITY & PHASE RELATION:

H1-H3 (OR 1-2): DYN1 H3-X2: H3-X3: H2-X3: H2-X2:
BY: DM DATE: 10/21/11 EQUIPMENT ID: 10452028 (6/14/2012)

LOAD LOSS & IMPEDANCE:

	AMPS	AMB #1	AMB #2	AVG	AVG V	WATTS
NOM TAP:	69.4	19.6 °C	20.1 °C	19.9 °C	766.0	10067
MAX TAP:		°C	°C	°C		
MIN TAP:		°C	°C	°C		

AMB #1 = WINDING AMB BEFORE, AMB #2 = WINDING AMB AFTER
BY: DM DATE: 10/21/11 EQUIPMENT ID: 10452221 (DUE 10/28/11), 10743614 (DUE 5/16/12), 10743616 (DUE 5/16/12)

NO-LOAD LOSS & EXCITATION CURRENT:

					WATTS
%VOLTS: 100	V-AVG: 480	Iex1: 15.3	Iex2: 11.7	Iex3: 14.6	3447
%VOLTS:	V-AVG:	Iex1:	Iex2:	Iex3:	
%VOLTS:	V-AVG:	Iex1:	Iex2:	Iex3:	

BY: DM DATE: 10/21/11 EQUIPMENT ID: 10452221 (DUE 10/28/11)

DIELECTRIC TESTS:

IMPULSE: 60 ✓ HIPOT (UNIT): 34/3 INDUCED POTENTIAL: 960 ✓ HIPOT (CONT): ✓
BY: DM DATE: 10/21/11 EQUIPMENT ID: IMPULSE: 10452051 (DUE 2/17/12), 10513324 (DUE 2/17/12)
HIPOT: 10903546 (DUE 6/29/12)
INDUCED: 10452221 (DUE 10/28/11)

Test Data Input

File Edit Window Query Help

S.O.: DS90529001 Dgn: 90525 Phase: 3 KVA: 1500.0 Test Date: 10/21/2011 Tested by:

Phase Relation: DYN1 Customer: Square D Company CoolCls: FA33 P.O.#: 30057870 GWAL

Tap Voltage Ratio: T1: 47.249 T2: 46.177 T3: 45.031 T4: 43.957 T5: 42.743 T6: T7: Term 1-2

TTR Instrument: 47.245 46.171 45.026 43.955 42.742 Term 2-3

47.255 46.177 45.036 43.964 42.748 Term 3-1

Winding Resistances HV Tap: @ 19.8 °C Tap: 3 1-2: 65390 2-3: 65430 3-1: 65460 Total: 4.2779

Ohmmeter: HV Tap: @ °C Tap: 1-2: 2-3: 3-1: Total:

HV Tap: @ °C Tap: 1-2: 2-3: 3-1: Total:

Low Voltage @ 19.3 °C 1-2: 00077 2-3: 00079 3-1: 00080 Total: .00172

Losses LL / IZ @ 19.9 °C Tap: 3 Volts 766.0 WATTS: 10067 Load Loss: 13493 % Z 6.172

LL Instrument: LL / IZ @ °C Tap: Volts WATTS: Load Loss: % Z

LL / IZ @ °C Tap: Volts WATTS: Load Loss: % Z

NL 110% NL - V AVG: I A: I B: I C: WATTS: NL Loss: % IEX:

Instrument: 100% NL - V AVG: 480 I A: 15.3 I B: 11.7 I C: 14.6 WATTS: 3447 NL Loss: 3447 % IEX: .7686

90% NL -V AVG: I A: I B: I C: WATTS: NL Loss: % IEX:

Thermal Data Results:

KVA:	1500	2000	
RSE:	115	115	
LV TTL:	83	115	
HV TTL:	94	115	
LV LL:	0.0	0.0	
HV LL:	0.0	0.0	
LV NL:	0.0		
HV NL:	0.0		

Partial Discharge Extinction: 0 % of Rated Voltage

Audible Sound Level - AA: dB(A) FA: dB(A)

Save Data | Calculate Values

☐ Sound Test

☐ Corona Test

☐ Temp Test

Special Tests:

ANSI Standards
UL Listing
Certified Test Report
100% Qc Impulse Test
Temp Tst Data from Sim Ltr

Comments:

1) THERMAL DATA TAKEN FROM DS88490001
2) GUARANTEED IMPEDANCE ON

Regulation:	1.00 pf	0.90 pf	0.85 pf	0.80 pf	0.75 pf
	1.084	3.597	4.088	4.474	4.789

Efficiency:	125%	100%	75%	50%	25%
	98.69	98.87	99.02	99.09	98.86

Oct/21/2011 8:27

DS90529001	LL	NL	% Z	Test Date
90525	13493	3447	6.17	10/21/11
Test History				
Population - 7				
Avg	13419	3422	6.18	
Min Tol.	12077	3080	5.95	
Max Tol.	14761	3764	6.41	

INTERNAL TEST REPORT

KVA: 1500	STANDARDS: IEEE	Um:	Nº: DS90529001

Ambient Conditions — Temperature: °C

MEASUREMENTS OF WINDINGS RESISTANCES

°C	VOLTAGE	CURRENT	R U-V (Ω)		R V-W (Ω)		R W-U (Ω)		Σ W	
19.8	12470	69.4	.65390		.65430		.65460		4735	
19.3	480	1804.2	.00077		.00079		.00080		3850	
20.0	12470	69.4	.65441	-2.1 %	.65481	-2.1 %	.65511	-2.0 %	Q01:	.66866
20.0	480	1804.2	.00077	-5.7 %	.00079	-3.3 %	.00080	-2.0 %	Q01:	.00082

(See load losses)

LOAD LOSS AND SHORT CIRCUIT IMPEDANCE MEASUREMENTS

SUPPLY	VOLTAGE (V)	CURRENT (A)			LOAD LOSSES (Wc)				
					W1	W2	W3	Wt	Hz
	766.0		69.4					10067	60
			39.3	V_sc % = 6.14					

SUPPLY	VOLTAGE (V)	INTENSITY (A)			LOAD LOSSES (Wc)				
		Iu	Iv	Iw	W1	W2	W3	Wt	Hz
				V_sc % =					

SUPPLY	VOLTAGE (V)	INTENSITY (A)			LOAD LOSSES (Wc)				
		Iu	Iv	Iw	W1	W2	W3	Wt	Hz
				V_sc % =					

IEEE LOAD LOSSES & IMPEDANCE (TEMPERATURE CORRECTED)

Losses at 19.9 °C Resistives:	8586	Eddy:	1481	TL:	16937	Q01 Range:		MIN	5.75
Losses at 135 °C Resistives:	12470	Eddy:	1020	NL:	3447	2324	3486	% Z	
				LL:	13490	12850	16231	6.17	

DOE LOSSES & EFFICIENCY (50% LOAD AND 75C REF. TEMP)

Losses at °C Resistives:		Eddy:		LL:	2916	NL:	3447
Losses at °C Resistives:		Eddy:			MAX		
				TL:	6363	6659	EFF% 99.16

NEMA TP-1 EFFICIENCY

Losses at °C Resistives:		Eddy:					
Losses at °C Resistives:		Eddy:		WL:		TP1 EFF %	99.17

GUARANTEED LOSSES:	NO	NL:		TL:		LL:	

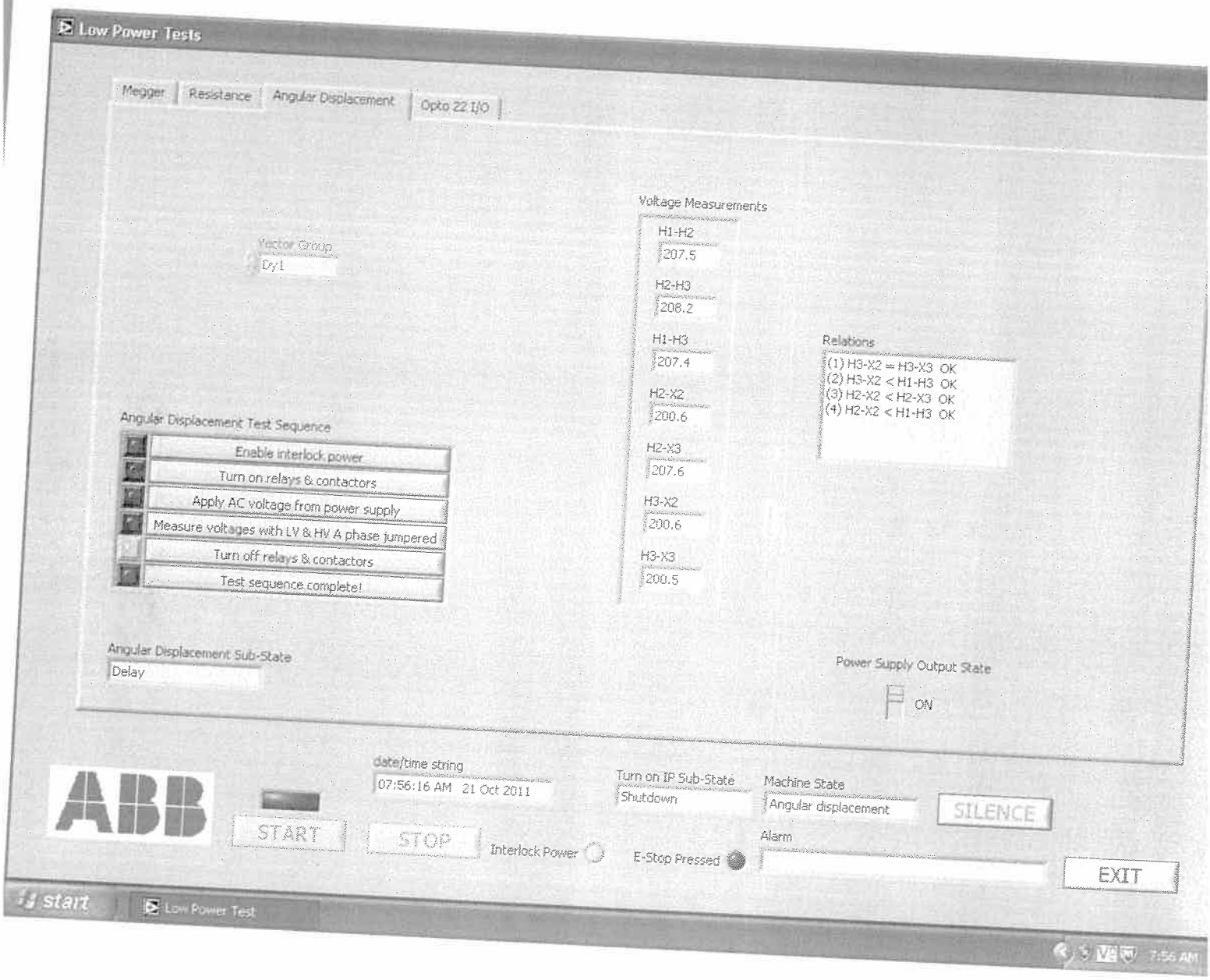
COMMENTS:
No test history exists at this time.

ANALYST: Gary W. Kensinger

APPROVED:
TESTS CHIEF: David S. Vinson, P.E.

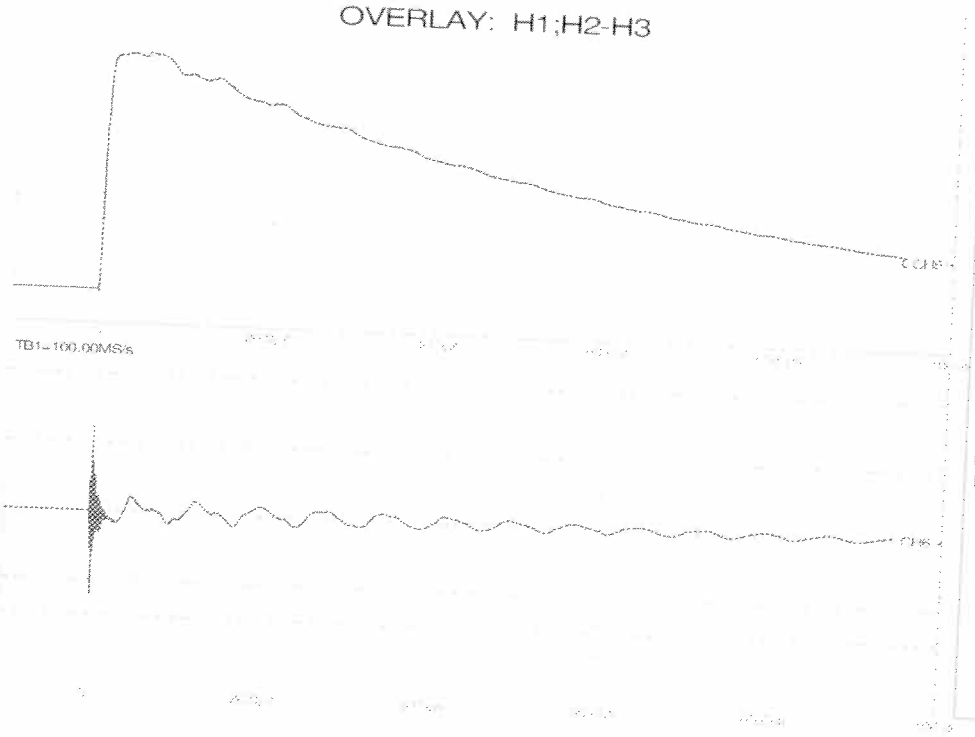
CUSTOMER:

Tests Date: 21-Oct-2011 8:28:04 AM


Low Power Tests
Megger
Resistance
Angular Displacement
Opto 22 I/O
Vector Group
Dy1
Voltage Measurements
H1-H2
207.5
H2-H3
208.2
H1-H3
207.4
H2-X2
200.6
H2-X3
207.6
H3-X2
200.6
H3-X3
200.5
Relations
(1) H3-X2 = H3-X3 OK
(2) H3-X2 < H1-H3 OK
(3) H2-X2 < H2-X3 OK
(4) H2-X2 < H1-H3 OK
Angular Displacement Test Sequence
Enable interlock power
Turn on relays & contactors
Apply AC voltage from power supply
Measure voltages with LV & HV A phase jumpered
Turn off relays & contactors
Test sequence complete!
Angular Displacement Sub-State
Delay
Power Supply Output State
ON
ABB
START
STOP
date/time string
07:56:16 AM 21 Oct 2011
Turn on IP Sub-State
Shutdown
Machine State
Angular displacement
SILENCE
Interlock Power
E-Stop Pressed
Alarm
EXIT
start
Low Power Test
7:56 AM

project (job) : 90529001

date: 10/21/11



No.: 121814

CH1
Terminal: H1
Eval.: LI
Up= 60.02kV
T1= 0.87µs
T2= 50.9µs

CH2
Terminal: H2-H3
Eval.: PK
Ip= 3.134A

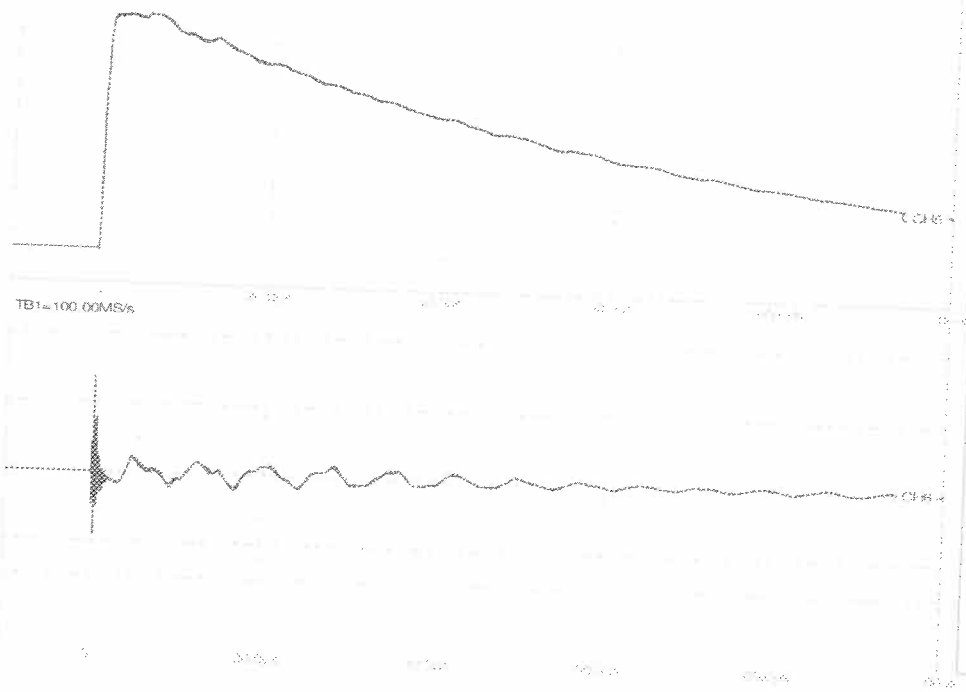
CH5 No. 121807
Terminal: H1
Eval.: REF: LI
Up= 30.93kV
T1= 0.86µs
T2= 50.8µs

CH6 No. 121807
Terminal: H2-H3
Eval.: REF: PK
Ip= 1.694A

project (job) : 90529001

date: 10/21/11

OVERLAY: H3;H1-H2

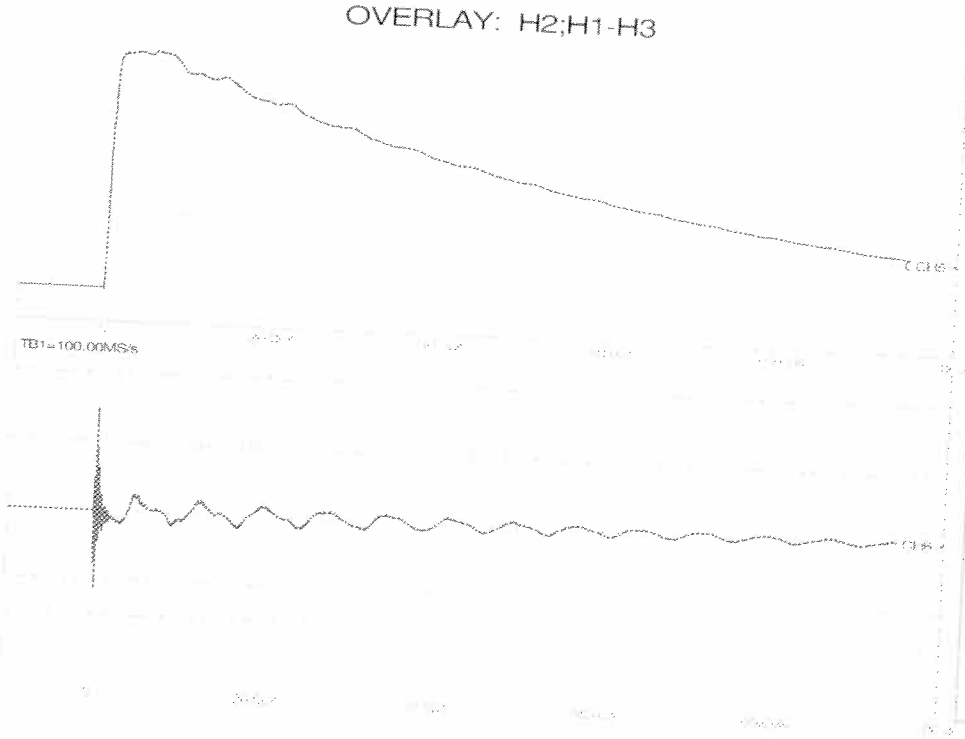


No.: 121826

CH1
Terminal: H3
Eval.: LI
Up= 59.55kV
T1= 0.85µs
T2= 50.9µs
CH2
Terminal: H1-H2
Eval.: PK
Ip= 3.205A
CH5 No. 121822
Terminal: H3
Eval.: REF: LI
Up= 30.78kV
T1= 0.87µs
T2= 50.8µs
CH6 No. 121822
Terminal: H1-H2
Eval.: REF: PK
Ip= 1.718A

project (job) : 90529001

date: 10/21/11



No.: 121820

CH1
Terminal: H2
Eval.: LI
Up= 60.05kV
T1= 0.87µs
T2= 50.9µs

CH2
Terminal: H1-H3
Eval.: PK
Ip= 3.594A

CH5 No. 121815
Terminal: H2
Eval.: REF: LI
Up= 31.06kV
T1= 0.87µs
T2= 50.8µs

CH6 No. 121815
Terminal: H1-H3
Eval.: REF: PK
Ip= 1.662A

DOE 99.12%
Date: 8/27/2011

ABB SPT DRY STACKED TRANSFORMER DESIGN PROGRAM (Version 1.01.00)
(User Calculated Data)

Time: 2:16:16 PM

Dgn: 90525 By: _PAWE___ Chk: _HENC_____ Date: 08/27/2011
Rev. 0

Two Winding Cruc Core Design

NAMEPLATE RATINGS:

K	1.00	ELEV	3300	FA	1.33	AMB	30.0
KVA	1500	WVV	12470	LVV	480	IZ	6.35
RSE	115	HVC	D	LVC	Y	HZ	60
CND	C/C	HVB	60	LVB	20	TYP	VENT

FCAN (2) 2.50
FCBN (2) 2.50
CNST SCSC

DESIGN RATINGS:
KVA 1500.0 HVB 60.00 LVB 20.00

Core:

		T1	9.000	J1	4.312	Wt1	2291
B	113.8	T2	8.000	J2	1.694	Wt2	804
Grade	M4	T3	5.000	J3	2.002	Wt3	719
Duct	0.000	T4	4.000	J4	1.001	Wt4	242
Legs	3	T5	0.000	J5	0.000	Wt5	0
YokeTyp	STD	T6	0.000	J6	0.000	Wt6	0
Cycles	7	T7	0.000	J7	0.000	Wt7	0
Lams	1	T8	0.000	J8	0.000	Wt8	0

T 10.250
J 9.009
W 36.750
Z 23.125
Z1 0.000
CWT 4055

Tube: TSCL 0.125 TSID 10.500 TSLDN 1 TSD 0.000
TD 0.000 TSLD 0.124

LV Data:

PV 277.1
PI 1804.2
N 14

SID 10.748
HT 30.000
SB 1.713
MLT 39.15
SOD 14.174

Ac 1.2600
WT 635
LVCWT 289
S 1.5035
STR 0.0849
IR 5675
CS 19026
WSI 0.299
KWSI 0.295
TRANS CONT

Wire 0.240 x 30.000
HxW 1 x 1
T/D-T/L 1.0
DN--Lay 14
DW---LI 0.009
SD (2) 0.500 PGS_STK

LT 0.250
LW 4.00
LL 48.00
PO 0.500

ESS: ESSDUCT 0.000 ESSINSTK 0.000 ESSTK 0.000
ESSMTL NA ESSTYP NA

HL: LVHLSD 0.500 HLSLDN 1 HVHLSD 0.625
HLD 0.000 HLSLD 0.120

HV Data:

PV 12470.0
PI 42.2
N 561

SID 16.676
HT 28.976
SB 1.521
MLT 98.42
SOD 20.518

Ac 0.0254
WT 949
HVCWT 348
S 1.6593
STR 0.0170
IR 7141
CS 24256
WSI 0.310
KWSI 0.310
TRANS DIAG

Wire 0.102 x 0.258
HxW 1 x 1
T/D-T/L 16.0
DN--Lay 42
DW---LI 0.303
LI2 0.000
DSP--SD (0) 0.375 NA

LT 0.102
LW 0.26
LL 24.00
PO 0.000

Constants:

	LVSBF 1.053	HVSBF 1.053		SF 0.955
LVWC S	LVABF 1.000	HVABF 1.030		
LVWREINS 0.000				NLCST 0.000
	LVBRK1 0.000	HVBRK1 1.000		LLCST 0.000
HVWC S	LVBRK2 0.000	HVBRK2 0.000		HVBRKIHT 0.000
HVWREINS 0.012				HVTAPDSP 0.000
	LVEP1 0.000	HVEP1 0.000		HLSBF 1.053
LVNLRSE 11.0	LVEP2 0.000	HVEP2 0.000		
HVNLRSE 2.0	LVEP3 0.000	HVEP3 0.000		HVEPJA 0.000
				PD 0.000
LVWREINTYP NA				
LVLAYINTYP NMN		HVWREINTYP NA		
		HVLAYINTYP NA		
LVINTMOLD False	LVINTMOLD1 0.000			LVINTMOLD2 0.000
HVINTMOLD False	HVINTMOLD1 0.000			HVINTMOLD2 0.000

HV Bus (1) 0.250 x 2.00 x 36 HVBPRM CHS
ENCL 94 x 108 x 60 ETYP INDOOR

LV Bus (1) 0.350 x 5.00 x 78 LVBPRM CHS
HVBPRM CVS

Thermal Data: 60 Hz

	LV	HV	K-Factor LV	K-Factor HV
Wdg	90.1	98.5	90.1	98.5
Bus	46.0	1.0	46.0	1.0
Terminal	88.3	97.3	88.3	97.3
Total	93.5	97.9	93.5	97.9

Tot: IR2 0.90 IX4 6.14 IZ4 6.21 X/R 6.81

Load	LL	TL	Eff	Exc	NL	%Iex	pf	%Reg
1.25	21135	24455	98.71	1.1	4387	9.09	1.0	1.09
1.00	13526	16847	98.89	1.0	3320	1.01	0.9	3.61
0.75	7608	10929	99.04	0.9	2513	0.29	0.8	4.50
0.50	3382	6702	99.11				0.7	5.08
0.25	845	4156	98.90	Snd	64.00		0.6	5.49

C&C Wt 6972 Tot Wt 8951 Sub TOC 15792

Costs: Tape ____
Ins ____
LV ____
HV ____
Cast ____
Cut ____
Stack ____
C/C ____
LV.B ____
HV.B ____
SM ____
Weld ____
TK.Cut ____
Tk.Wld ____
Imp ____
Pan ____
Tank ____
Final ____
Paint ____
Test ____
Tot.Hrs ____

Core	5406
Tube	132
LV Cond	3378
Ins	301
Lead	493
Bus	621
ESS Ins	0
ESS Cond	0
HL Ins	649
HV Cond	3771
Ins	0
Epoxy	0
Lead	43
Bus	86
Sticks	106
Keyspacer	183
Standoff	219
Frame	317
PhaseBar	87
Sub COST	15792
Total C&C	____

Encl 444
Base 382
Tot.Acc's ____
Mat'l ____
Labor ____
Cost ____
ERMAC / ____
Net SP ____
Freight x ____
Tot SP ____

Taps:

661	0
646	0
630	0
614	0
598	0

Test Data:

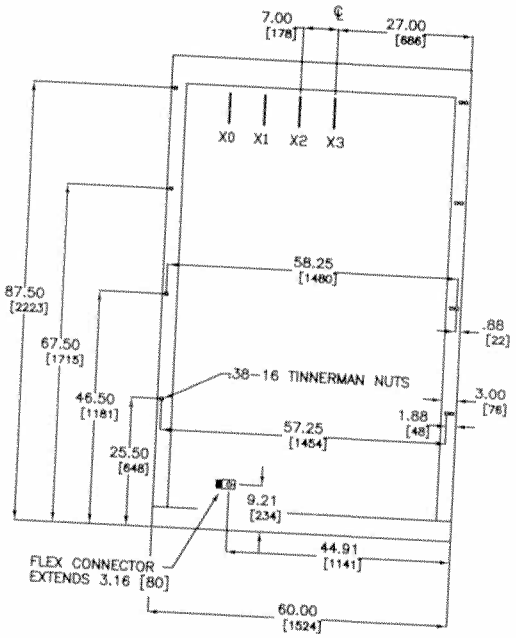
aa/fa	LV	HV	Iex
NL Run	____	____	____
IR Run	____	____	
TL Run	____	____	
Total	____	____	dBA

EXPECTED IZ: 6.21 X 1.008 = 6.26% (5.75 MIN)

OTHER JOBS: DS90529

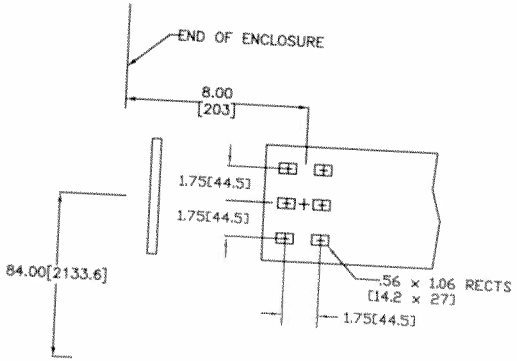
REV	DESCRIPTION	BY	DATE
A	RECORD	AKH	8/31/2011
B	ADDED DESIGNATION	JAKI	9.14.2011
C	ADDED DESIGNATION	JAKI	10.07.2011

DESIGNATION:
DS90529001/EDLVD-02B
DS90529002/EDLVD-03B
DS90529003/EDLVD-04B
DS90529004/EDLVD-05B
DS90529005/EDLVD-06B
DS90529006/EDLVD-08B
DS90529007/EDLVD-09B



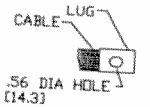
PZ4 INTERFACE
LV END VIEW

← FRONT



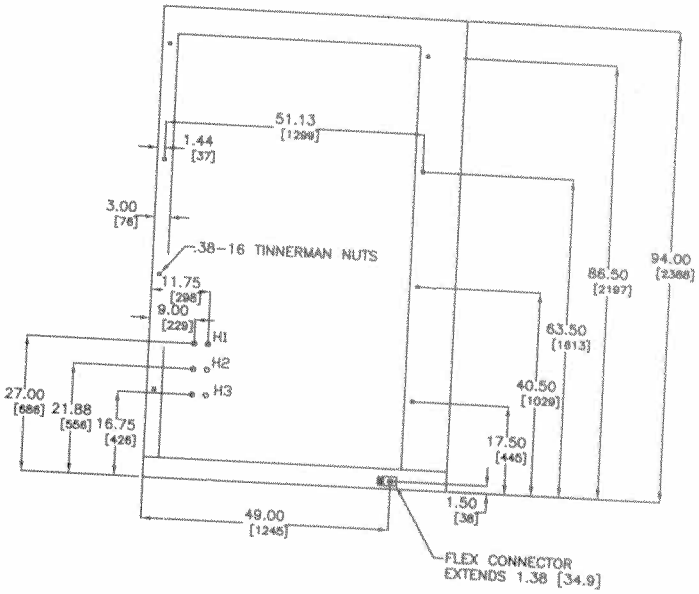
TO FLOOR

MAT'L: .25 x 5.00
[6.4 x 152.4]
SILVER PLATED COPPER



GROUND TERMINATION

HV CABLE LENGTHS
H1 – 25.00/635
H2 – 35.00/889
H3 – 50.00/1270
CABLE SIZE – (1) – #2



FRONT→

HVL INTERFACE
HV END VIEW

DUAL DIMENSIONS: INCHES
MILLIMETERS

JOB NAME: FIRST SOLAR MSA-1	EQUIPMENT DESIGNATION:
JOB LOCATION: MESA, AZ	EQUIPMENT TYPE: POWER ORY II
DRAWN BY: JAKI	DRAWING TYPE: LEFT/RIGHT VIEW
ENGR:	SOLIAFIRE 2D Schneider Electric
DATE: 7/23/2011	DWG# F30057870-047-01-3
DRAWING STATUS: RECORD	PG 3 OF 3 REV C