



MOTOR CONTROL CENTER INSPECTION



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 CATALOG NO. _____ DRAWING NO. _____ VOLTAGE CLASS _____
 MAIN BUS RATING _____ A MAIN BUS NEUTRAL RATING _____ A CONDUCTOR CU AL
 CURRENT WITHSTAND RATING _____ NUMBER OF SECTIONS _____ LISTING UL CSA OTHER

INSTALLED DEVICES

MAIN BREAKER _____ TYPE _____ AMPACITY _____ MAIN DISCONNECT _____ FUSE TYPE _____ SIZE _____ MLO _____
 TOTAL POSITIONS EQUIPPED _____ NO. OF SPARE SPACES _____ TOTAL POSITIONS USED _____

DESCRIPTION	INSPECTED	CONDITION	CLEANED/LUBED
OVERALL CLEANLINESS	<input type="checkbox"/>		
INSULATING MEMBERS	<input type="checkbox"/>		
CUBICLES	<input type="checkbox"/>		
GROUND CONNECTIONS	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		

POSITION	LOAD	LOAD COND. SIZE	NO. COND./ PHASE	M. S. DISC. TYPE	OVER-CURRENT TYPE	OVER-CURRENT SIZE	OVER-LOAD SIZE	STARTER NEMA SIZE	COMMENTS

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



MOTOR CONTROL CENTER INSULATION TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 CATALOG NO. _____ DRAWING NO. _____ VOLTAGE CLASS _____
 MAIN BUS RATING _____ A MAIN BUS NEUTRAL RATING _____ A CONDUCTOR CU AL
 CURRENT WITHSTAND RATING _____ NUMBER OF SECTIONS _____ LISTING UL CSA OTHER

INSTALLED DEVICES

MAIN BREAKER _____ MLO _____ TYPE _____ AMPACITY _____ MAIN DISCONNECT _____ FUSE TYPE _____ SIZE _____
 TOTAL POSITIONS EQUIPPED _____ NO. OF SPARE SPACES _____ TOTAL POSITIONS USED _____

DESCRIPTION	INSPECTED	CONDITION	CLEANED/LUBED
OVERALL CLEANLINESS	<input type="checkbox"/>		
INSULATING MEMBERS	<input type="checkbox"/>		
CUBICLES	<input type="checkbox"/>		
GROUND CONNECTIONS	<input type="checkbox"/>		
AUXILIARY DEVICES	<input type="checkbox"/>		

TEST VOLTAGE _____ KVDC EQUIPMENT TEMPERATURE _____ °C TEMPERATURE CORRECTION FACTOR TO 20 °C, TCF _____

BUS SECTION TESTED	INSULATION RESISTANCE TEST RESULTS - MEGOHMS											
	RDG.	PHASE									20 °C	
		A-GND	B-GND	C-GND	N-GND	A - B	A - C	B - C	A - N	B - N		C - N
	RDG.											20 °C
	RDG.											20 °C
	RDG.											20 °C
	RDG.											20 °C
	RDG.											20 °C
	RDG.											20 °C
	RDG.											20 °C

COMMENTS:
 DEFICIENCIES:

EQPT. INVENTORY NO. _____ TESTED BY: _____



MOTOR STARTER TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 CATALOG NO. _____ STARTER SIZE _____ FORM _____
 SERIES _____ MAXIMUM VOLTAGE _____ INT. RATING _____ kA @ _____ kV
 OPERATING VOLTAGE _____ CONTROL VOLTAGE _____ OTHER _____
 MOTOR CONTROL CENTER SYSTEM VOLTAGE _____ STARTER IDENTIFICATION _____

OVERCURRENT PROTECTION DEVICES

CONTROL POWER FUSE: MFR. _____ TYPE _____ SIZE _____
 MAIN POWER FUSE: MFR. _____ TYPE _____ SIZE _____
 OVERLOAD PROTECTION: MFR. _____ TYPE _____ TESTED YES NO

INSTRUMENT TRANSFORMER DATA

CONTROL POWER TRANSFORMER: MFR. _____ KVA _____ TYPE _____ VOLTAGE _____
 CURRENT TRANSFORMER: MFR. _____ RATIO _____ :5 TYPE _____ CAT. NO. _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS			
INSULATING MEMBERS			
MECHANICAL CONNECTIONS			
STRUCTURAL MEMBERS			
CUBICLE			
RACKING DEVICES			
SHUTTER			
CONTACT FINGERS			

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
MAIN CONTACTS			
ARCING CONTACTS			
ARC CHUTES			
OPERATING MECHANISM			
CONTACT SEQUENCE			
GROUND CONNECTIONS			
AUXILIARY DEVICES			

INSULATION TEST VOLTAGE _____ kVDC TEST VOLTAGE MULTIPLIER, K1 = _____ K2 = (K1) (TCF)
 EQUIPMENT TEMPERATURE _____ °C TEMPERATURE CORRECTION FACTOR TO 20 °C, TCF _____

	RANGE MULTIPLIER	K2	INSULATION RESISTANCE TEST RESULTS - MEGOHMS						
			POLE 1 (P1-P2)		POLE 2 (P2-P3)		POLE 3 (P1-P3)		
			READING	20 °C	READING	20 °C	READING	20 °C	
POLE TO POLE									
POLE TO FRAME									
LINE TO FRAME									
LOAD TO FRAME									
LINE TO LOAD									

CONTACT RESISTANCE MICRO-OHMS	POLE 1	POLE 2	POLE 3

CONTROL WIRING - MEGOHMS			
READING		20 °C	

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



MEDIUM VOLTAGE VACUUM MOTOR STARTER TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 USER SAMPLE FORMS COMPANY
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 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 CATALOG NO. _____ STARTER SIZE _____ FORM _____
 SERIES _____ MAXIMUM VOLTAGE _____ INT. RATING _____ kA @ _____ kV
 OPERATING VOLTAGE _____ CONTROL VOLTAGE _____ OTHER _____
 MOTOR CONTROL CENTER SYSTEM VOLTAGE _____ STARTER IDENTIFICATION _____

OVERCURRENT PROTECTION DEVICES

CONTROL POWER FUSE: MFR. _____ TYPE _____ SIZE _____
 MAIN POWER FUSE: MFR. _____ TYPE _____ SIZE _____
 OVERLOAD PROTECTION: MFR. _____ TYPE _____ TESTED YES NO

INSTRUMENT TRANSFORMER DATA

CONTROL POWER TRANSFORMER: MFR. _____ VA RATING _____ TYPE _____ VOLTAGE _____
 CURRENT TRANSFORMER: MFR. _____ RATIO _____ :5 TYPE _____ CAT. NO. _____

DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE	DESCRIPTION	INSPECTED	CONDITION	CLEAN/LUBE
OVERALL CLEANLINESS				OPERATING MECHANISM			
INSULATING MEMBERS				CONTACT FINGERS			
MECHANICAL CONNECTIONS				VACUUM INTERRUPTER			
STRUCTURAL MEMBERS				CONTACT EROSION INDICATOR			
CUBICLE				CONTACT SEQUENCE			
RACKING DEVICES				GROUND CONNECTIONS			
SHUTTER				AUXILIARY DEVICES			

INSULATION TEST VOLTAGE _____ KVDC TEST VOLTAGE MULTIPLIER, K1 = _____ K2 = (K1) (TCF)
 EQUIPMENT TEMPERATURE _____ °C TEMPERATURE CORRECTION FACTOR TO 20°C, TCF _____
 MILLIWATT LOSS TEST VOLTAGE _____ KVDC HIGH POTENTIAL TEST VOLTAGE _____ KVDC _____ KVAC

INSULATION TESTS	RANGE MULTIPLIER	K2	POLE 1 MEGOHMS (P1 - P2)		POLE 2 MEGOHMS (P2 - P3)		POLE 3 MEGOHMS (P1 - P3)	
			READING	20 °C	READING	20 °C	READING	20 °C
POLE TO POLE								
POLE TO FRAME								
LINE TO FRAME								
LOAD TO FRAME								
LINE TO LOAD								

CONTACT MEASUREMENTS		POLE 1	POLE 2	POLE 3
CONTACT TRAVEL - INCHES				
POLE RESISTANCE	RDG.			
MICRO - OHMS	20 °C			
INTERRUPTER RESISTANCE	RDG.			
MICRO - OHMS	20 °C			

CONTROL WIRING - MEGOHMS			
READING		20 °C	

	POLE 1	POLE 2	POLE 3
HIGH POTENTIAL TEST			
MILLIWATT LOSS TEST			

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



MOTOR POLARIZATION INDEX (PI) TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C
 TEST VOLTAGE _____ KVDC TEST VOLTAGE MULTIPLIER, K1 _____ K2 = (K1)(TCF)
 TEMPERATURE CORRECTION FACTOR TO 20°C, TCF _____

MINUTES	WINDING 1 TO FRAME - MEGOHMS				WINDING 2 TO FRAME - MEGOHMS				WINDING 3 TO FRAME - MEGOHMS			
	RDG	RANGE MULT	K2	20°C	RDG	RANGE MULT	K2	20°C	RDG	RANGE MULT	K2	20°C
0.25												
0.50												
0.75												
1.00												
1.25												
1.50												
1.75												
2.00												
2.50												
3.00												
4.00												
5.00												
6.00												
7.00												
8.00												
9.00												
10.00												
P.I. NO.*												

* POLARIZATION INDEX = 10 MINUTE READING / 1 MINUTE READING

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____

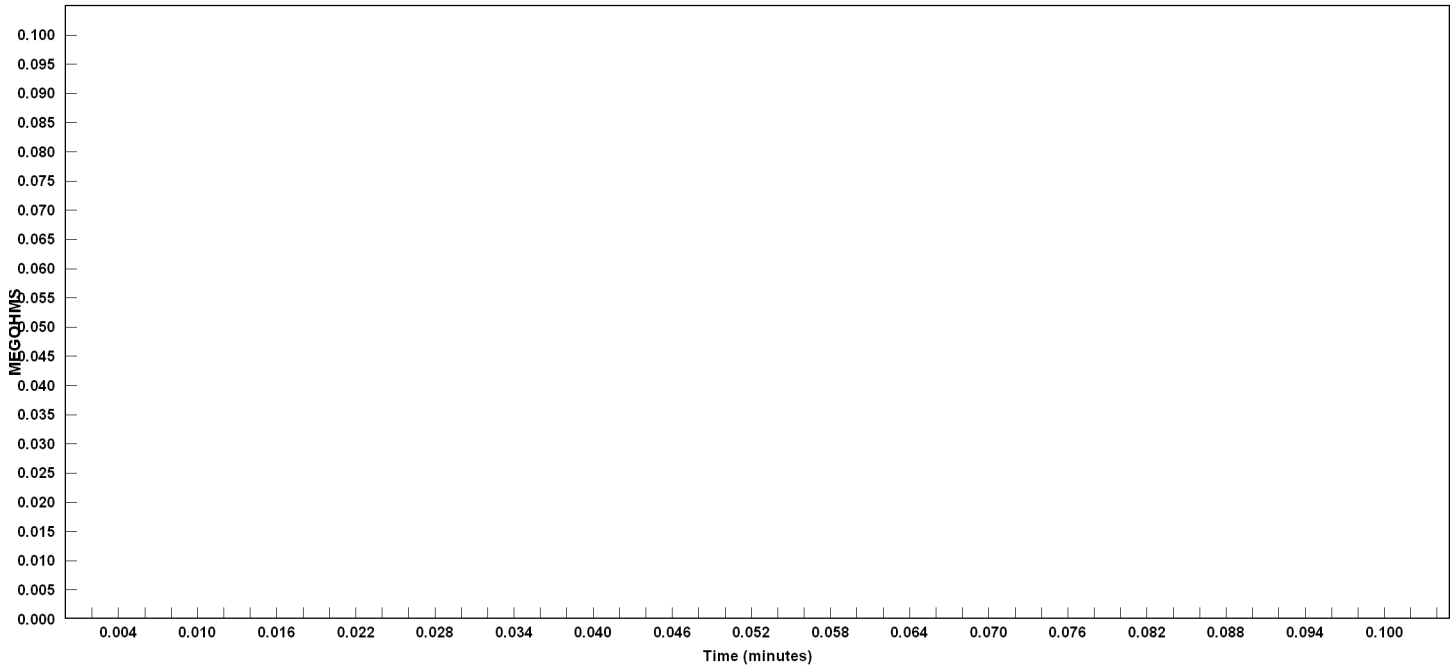


MOTOR POLARIZATION INDEX (PI) TEST



PAGE _____

POLARIZATION CURVE



- Winding 1: Red Square
- Winding 2: Blue Circle
- Winding 3: Green Triangle



MOTOR DISSIPATION FACTOR TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 USER SAMPLE FORMS COMPANY
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 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C

TEST	TYPE OF TEST	TEST KV	SW. POS.	CAPACITANCE					% DISSIPATION FACTOR					CALC. % P.F. 20°C	
				DIAL READING		CALC. AVG.	MULTI-PLIER	CAP. pF	DIAL READING		CALC. AVG.	MULTI-PLIER	MEAS. %		20° %
				NORM.	REV.				NORM.	REV.					
1															
2															
3															
4															
5															
6															

TEMPERATURE CORRECTION FACTOR TO 20°C, TCF _____

- WINDING TIP UP TESTS**
1. GST - WINDING 1 - GROUND @ 25% TEST VOLTAGE
 2. GST - WINDING 1 - GROUND @ 100% TEST VOLTAGE
 3. GST - WINDING 2 - GROUND @ 25% TEST VOLTAGE
 4. GST - WINDING 2 - GROUND @ 100% TEST VOLTAGE
 5. GST - WINDING 3 - GROUND @ 25% TEST VOLTAGE
 6. GST - WINDING 3 - GROUND @ 100% TEST VOLTAGE

$$PF = \frac{DF}{\sqrt{1 + DF^2}}$$

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



MOTOR HIGH POTENTIAL TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

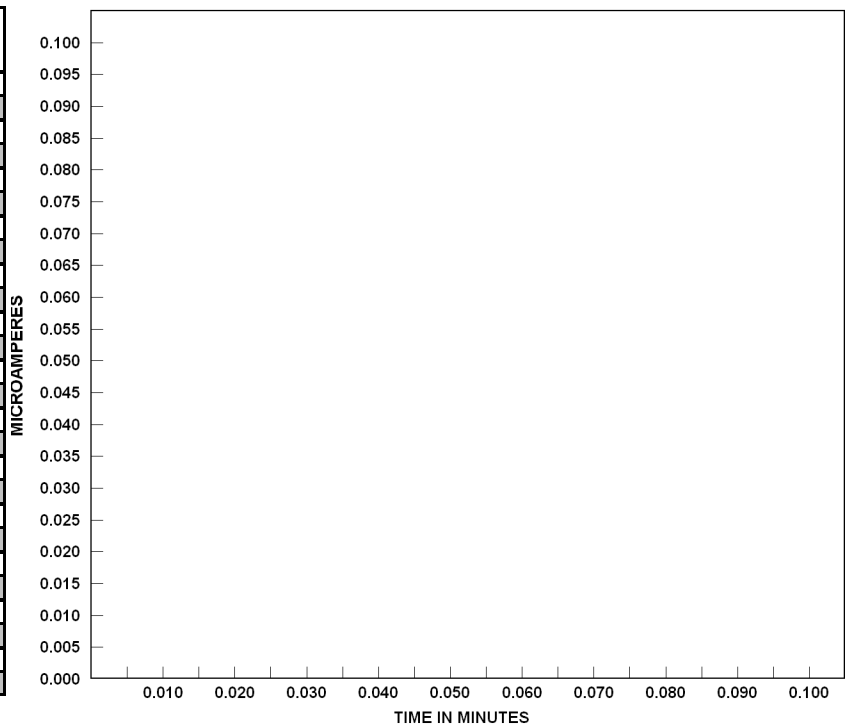
MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

CONNECTED EQUIPMENT _____
 MOTOR TEMPERATURE _____ °C TEST VOLTAGE UTILIZED: DC AC, 60HZ AC, 180HZ

PHASE IDENTIFICATION

_____ Winding 1 _____ Winding 2 _____ Winding 3

TIME MINUTES	TEST VOLTAGE (volts)	WINDING 1	WINDING 2	WINDING 3
0.25				
0.50				
0.75				
1.00				
1.25				
1.50				
1.75				
2.00				
3.00				
4.00				
5.00				
6.00				
7.00				
8.00				
9.00				
10.00				
11.00				
12.00				
13.00				
14.00				
15.00				
16.00				
17.00				
18.00				
19.00				
20.00				



COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



MOTOR STATOR WINDING RESISTANCE TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

R_T = TOTAL WINDING RESISTANCE AT 85 °C
 R_M = TOTAL WINDING RESISTANCE AT TEST TEMPERATURE
 T_S = TEMPERATURE FOR DESIRED RESISTANCE (85 °C)
 T_M = AMBIENT TEMPERATURE
 T_K = TEMPERATURE RESISTANCE CONSTANT (°C)

 COPPER = 234.5 °C
 DELTA WINDING MULTIPLIER = 3/2X
 WYE WINDING MULTIPLIER = 3X

CONNECTED CONFIGURATION DELTA WYE
 MOTOR TEMPERATURE _____ °C

$$R_T = R_M \frac{T_S + T_K}{T_M + T_K}$$

	MEASURED RESISTANCE OHMS	RESISTANCE CORRECTED TO 85 °C, OHMS
PHASE A - T1 - T2		
PHASE B - T3 - T4		
PHASE C - T5 - T6		
TOTAL RESISTANCE		

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



SYNCHRONOUS MOTOR POLARIZATION INDEX (PI) TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C
 TEST VOLTAGE: STATOR _____ kVDC TEST VOLTAGE MULTIPLIER, K1 = 1 ROTOR _____ kVDC TEST VOLTAGE MULTIPLIER, K1 = 1
 TEMPERATURE CORRECTION FACTOR TO 20 °C, TCF _____ K2 = (K1) (TCF)

MINUTES	STATOR TO FRAME - ROTOR GUARDED				ROTOR TO FRAME - STATOR GUARDED			
	READING (megohms)	RANGE MULTIPLIER	K2	20 °C	READING (megohms)	RANGE MULTIPLIER	K2	20 °C
0.25								
0.50								
0.75								
1.00								
1.25								
1.50								
1.75								
2.00								
3.00								
4.00								
5.00								
6.00								
7.00								
8.00								
9.00								
10.00								
P. I.								

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____

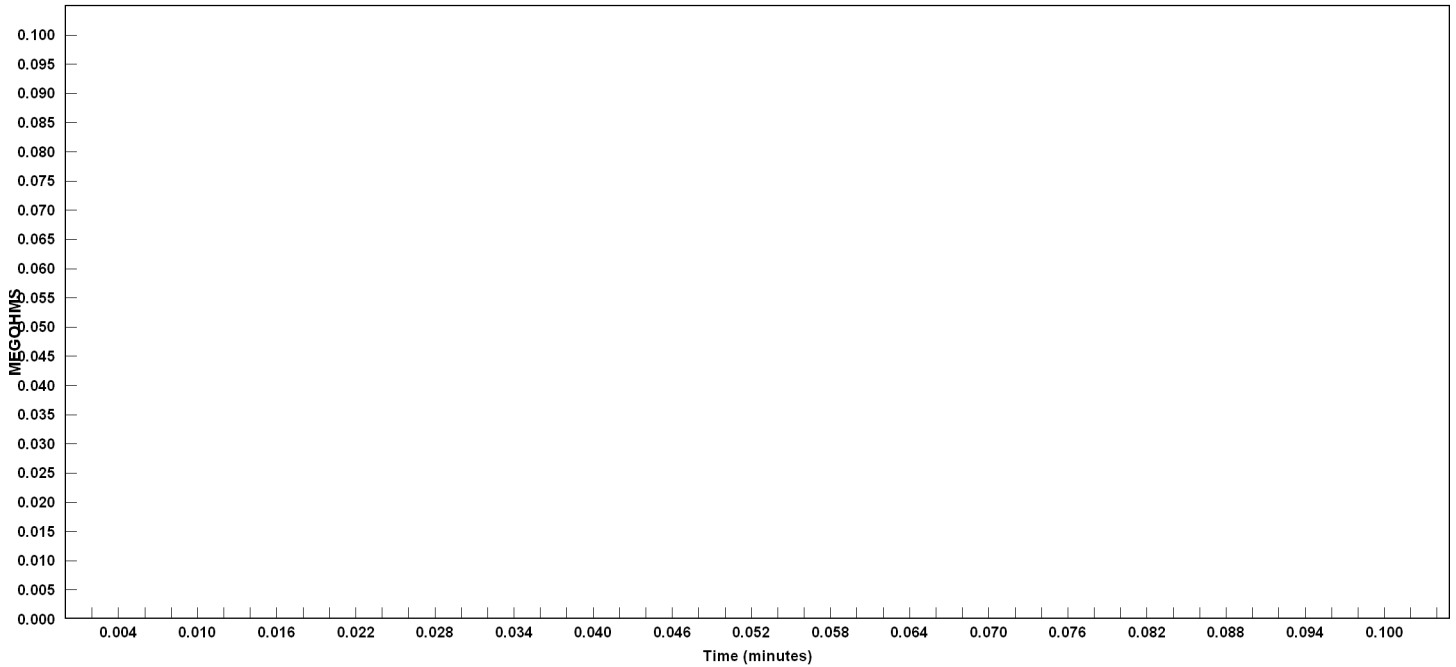


SYNCHRONOUS MOTOR POLARIZATION INDEX (PI) TEST



PAGE _____

POLARIZATION CURVE



Stator: Red Square
Rotor: Blue Circle



SYNCHRONOUS MOTOR POLARIZATION INDEX (PI) TEST - ARMATURE



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 USER SAMPLE FORMS COMPANY
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 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

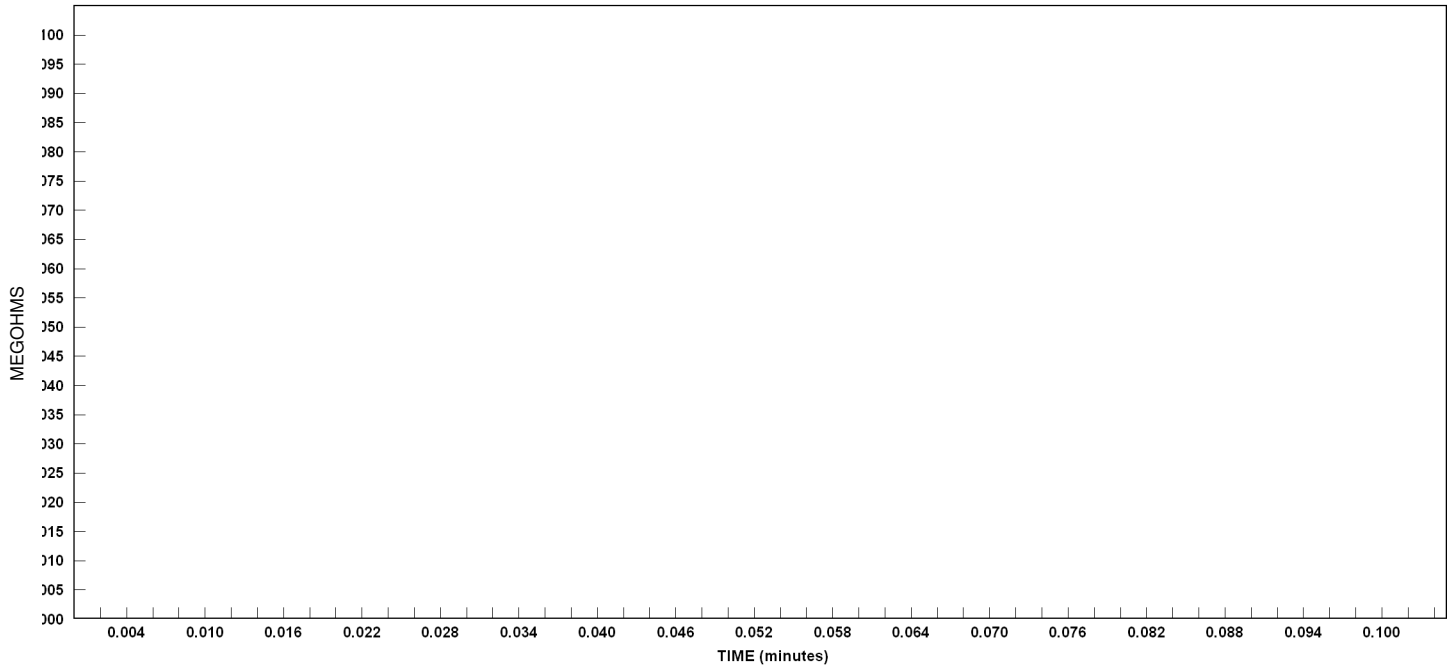
CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C
 TEST VOLTAGE _____ KVDC TEST VOLTAGE MULTIPLIER, K1 = _____ K2 = (K1) (TCF)
 TEMPERATURE CORRECTION FACTOR TO 20 °C, TCF _____

MINUTES	ARMATURE WINDING TO GROUND			
	READING (megohms)	RANGE MULTIPLIER	K2	20 °C
0.25				
0.50				
0.75				
1.00				
1.25				
1.50				
1.75				
2.00				
3.00				
4.00				
5.00				
6.00				
7.00				
8.00				
9.00				
10.00				
P. I.				

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____

POLARIZATION CURVE



Armature: Red Circle



SYNCHRONOUS MOTOR DISSIPATION FACTOR TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C
 TEMPERATURE CORRECTION FACTOR TO 20 °C, TCF _____

STATOR WINDING TEST

TYPE OF TEST	TEST kV	SW. POS.	CAPACITANCE					% DISSIPATION FACTOR					CALC. % P.F.	
			DIAL READING		CALC. AVG.	MULTIPLIER	PICO FARADS	DIAL READING		CALC. AVG.	MULTIPLIER	MEAS. %		20 °C %
			NORM.	REV.				NORM.	REV.					
25% GST=STATOR-GND; RTR GND														
100% GST=STATOR-GND; RTR GND														
25% GST=STATOR-GND; RTR GND														
100% GST=STATOR-GND; RTR GND														
25% UST=STATOR-ROTOR														
100% UST=STATOR-ROTOR														

ROTOR WINDING TEST

25% GST=RTR-GND; STATOR GND														
100% GST=RTR-GND; STATOR GND														
25% GST=RTR-GND; STATOR GND														
100% GST=RTR-GND; STATOR GND														
25% UST=ROTOR-STATOR														
100% UST=ROTOR-STATOR														

$$PF = \frac{DF}{\sqrt{1 + DF^2}}$$

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



SYNCHRONOUS MOTOR HIGH POTENTIAL TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

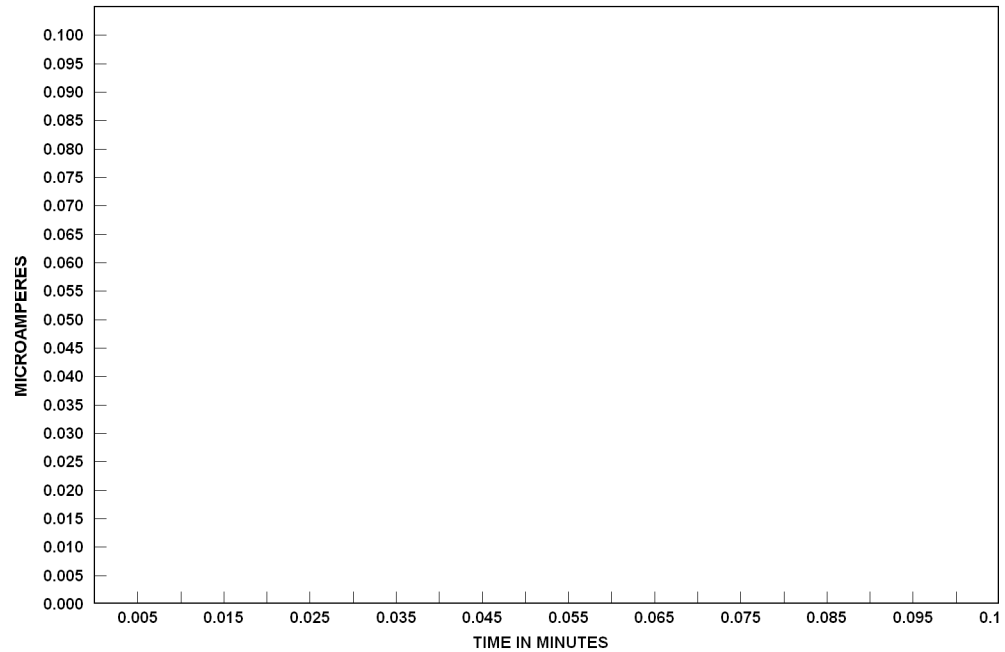
FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

CONNECTED EQUIPMENT _____ MOTOR TEMPERATURE _____ °C
 TEST VOLTAGE _____ kV DC AC

STATOR HIGH POTENTIAL TEST

TIME MINUTES	TEST VOLTAGE (kV)	μA
0.25		
0.50		
0.75		
1.00		
1.25		
1.50		
1.75		
2.00		
3.00		
4.00		
5.00		
6.00		
7.00		
8.00		
9.00		
10.00		



COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



SYNCHRONOUS MOTOR WINDING RESISTANCE



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
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 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

STATOR WINDING

WINDING MATERIAL: COPPER

	MEASURED RESISTANCE OHMS	RESISTANCE CORRECTED TO 85 °C, OHMS
PHASE A -		
PHASE B -		
PHASE C -		
TOTAL WINDING RESISTANCE		

R_T = TOTAL WINDING RESISTANCE AT 85 °C
 R_M = TOTAL WINDING RESISTANCE AT TEST TEMPERATURE
 T_S = TEMPERATURE FOR DESIRED RESISTANCE (85 °C)
 T_M = AMBIENT TEMPERATURE
 T_K = TEMPERATURE RESISTANCE CONSTANT (°C)
 COPPER = 234.5 °C
 DELTA WINDING MULTIPLIER = 3/2X
 WYE WINDING MULTIPLIER = 3X

ROTOR WINDING

WINDING MATERIAL: COPPER

MEASURED RESISTANCE	CALCULATED RESISTANCE CORRECTED TO 85 °C
OHMS	OHMS

CONNECTED CONFIGURATION: DELTA WYE
 MOTOR TEMPERATURE _____ °C

FIELD RESISTOR

NAMEPLATE VALUE	MEASURED RESISTANCE	CALCULATED RESISTANCE CORRECTED TO 85 °C
OHMS	OHMS	OHMS

$$R_T = R_M \frac{T_S + T_K}{T_M + T_K}$$

COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____



SYNCHRONOUS MOTOR ROTOR WINDING VOLTAGE DROP TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

NAMEPLATE DATA

MANUFACTURER _____ SERIAL NO. _____ TYPE _____
 FRAME _____ HORSEPOWER _____ VOLTAGE _____
 PHASE _____ FREQUENCY _____ HZ FULL LOAD CURRENT _____ AMPS
 LOCKED ROTOR CURRENT _____ AMPS RPM _____ POWER FACTOR _____
 SERVICE FACTOR _____ TEMPERATURE RISE _____ °C INSULATION CLASS _____
 DATE MANUFACTURED _____ NEMA DESIGN _____ WEIGHT _____
 SHAFT DIAMETER _____ LISTING UL CSA OTHER THERMALLY PROTECTED _____
 OTHER INFORMATION _____

FIELD INFORMATION

TYPE _____ SERIAL NO. _____ VOLTAGE _____ VDC
 CURRENT RATING _____ AMPS TEMPERATURE RISE _____ °C POWER FACTOR _____
 OTHER _____

COIL NO.	VOLTAGE READING (volts)	COIL NO.	VOLTAGE READING	COIL NO.	VOLTAGE READING
1		21		41	
2		22		42	
3		23		43	
4		24		44	
5		25		45	
6		26		46	
7		27		47	
8		28		48	
9		29		49	
10		30		50	
11		31		51	
12		32		52	
13		33		53	
14		34		54	
15		35		55	
16		36		56	
17		37		57	
18		38		58	
19		39		59	
20		40		60	

APPLIED TEST VOLTAGE _____ VAC

COMMENTS:
 DEFICIENCIES:

EQPT. INVENTORY NO. _____ TESTED BY: _____



VARIABLE FREQUENCY DRIVE



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

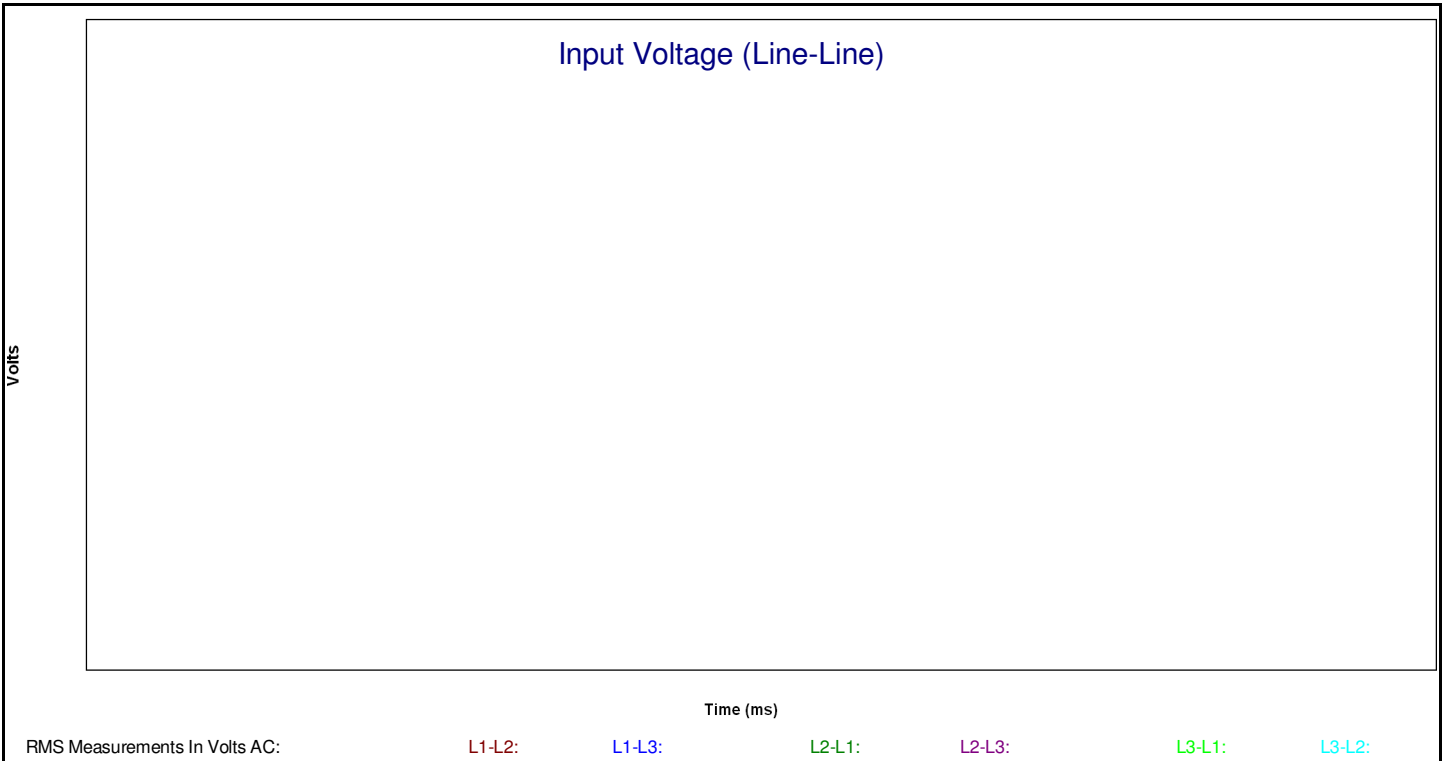
VFD	
MFG:	
EQUIPMENT ID:	
I/D:	
P/N:	
MODEL/HP:	
ENG:	
SYSTEM S/N:	
INPUT:	
OUTPUT:0-460VAC	
ORDER:	
WIRING DIAGRAM:	

MOTOR	
MFG:	
EQUIPMENT ID:	
I/D:	
M/D:	
HP:	
FRAME:	
VOLTS:	
AMPS:	
RPM:	

COOLING FANS:	Fan Manufacturer	
	Fan Model Number	
	Number of Fans	
	Number of Fans Not Operating	
	Number of Fans Replaced	

DLRO READINGS (micro-ohms)	LABEL:	AS FOUND:	AS LEFT:	LABEL:	AS FOUND:	AS LEFT:
	L1					
	L2					
	L3					
	T1					
	T2					
	T3					

TEST LOCATION:	L1 Channel 1	<i>Red Probe</i>
	L2 Channel 2	<i>Black Probe</i>
	Reference to Ground	Ground lead of scope

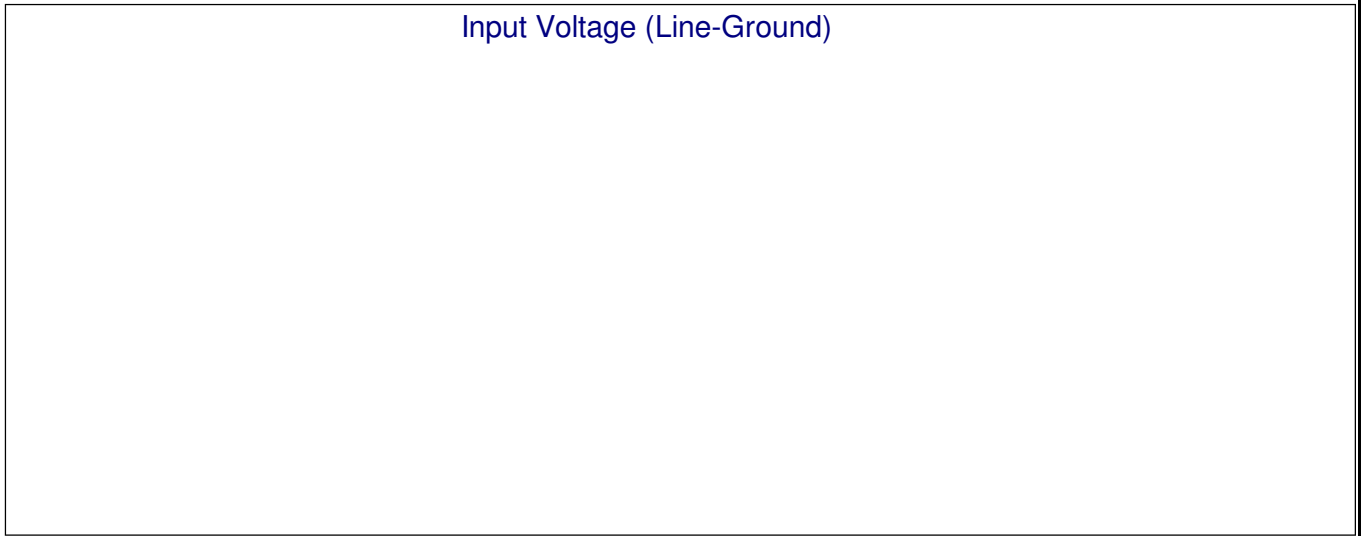


COMMENTS: _____
 DEFICIENCIES: _____

EQPT. INVENTORY NO. _____ TESTED BY: _____

Input Voltage (Line-Ground)

Volts



Time (ms)

RMS Measurements In Volts AC:

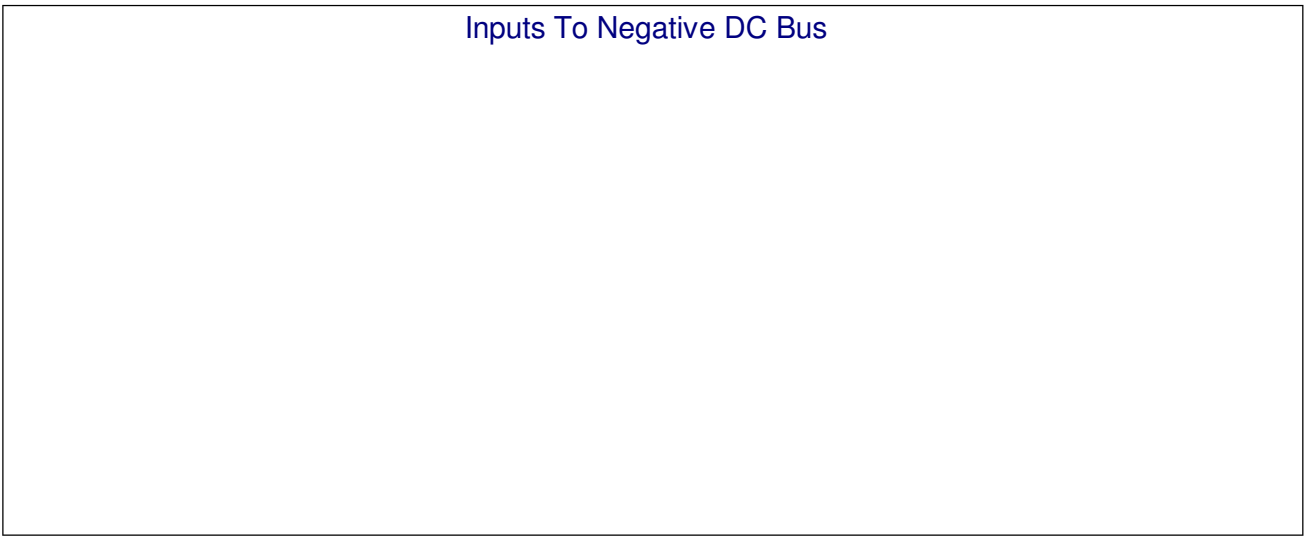
L1-G:

L2-G:

L3-G:

Inputs To Negative DC Bus

Volts



Amps

Time (ms)

RMS AC Measurements:

VL1-BUS:

IL1:

VL2-BUS:

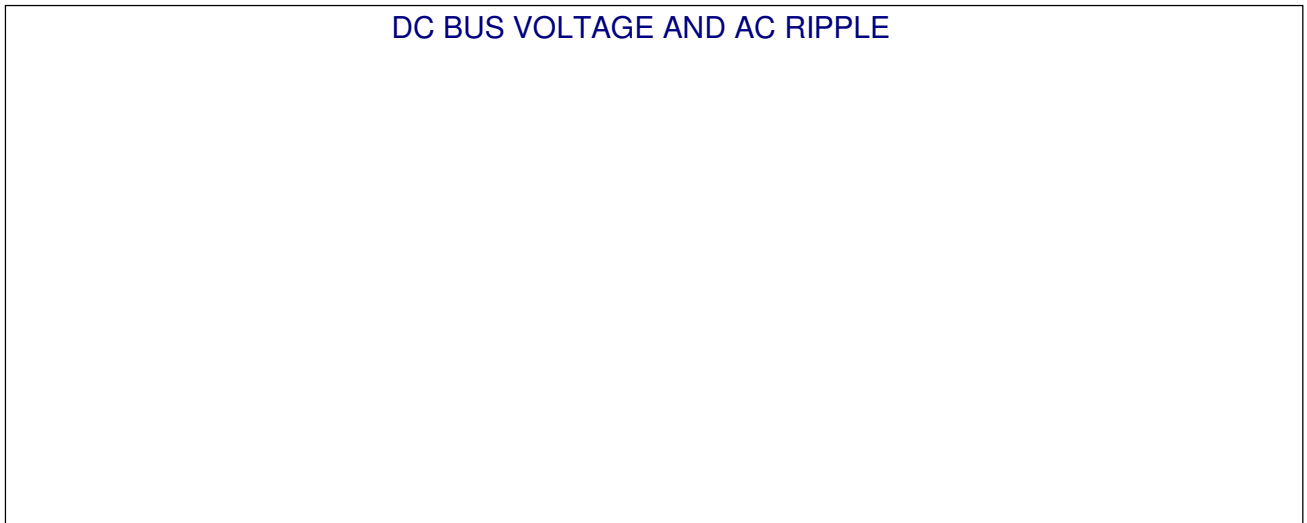
IL2:

L3-BUS:

IL3:

DC BUS VOLTAGE AND AC RIPPLE

DC Volts



AC RIPPLE

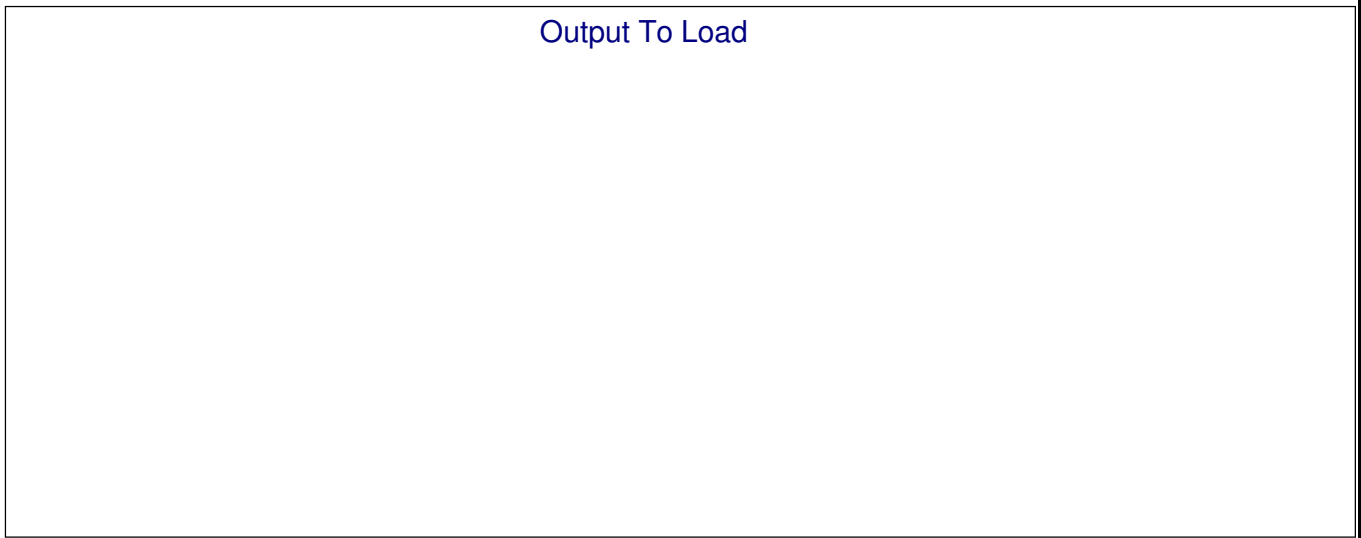
Time (ms)

DC BUS VOLTAGE (in volts):

DC BUS AC RIPPLE (in volts):

Output To Load

Volts



Time (ms)

RMS Measurements In Volts AC:

T1-T2:

T1-T3:

T2-T1:

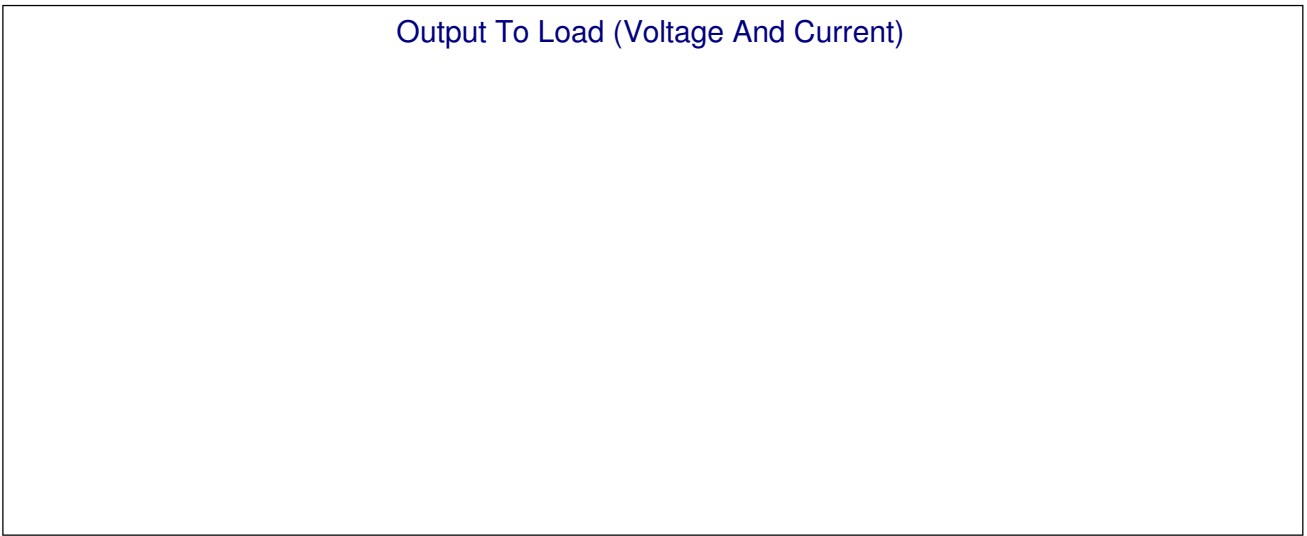
T2-T3:

T3-T1:

T3-T2:

Output To Load (Voltage And Current)

Volts



Amps

Time (ms)

RMS Measurements In Volts AC:

T1V-L:

T1I:

T2VL:

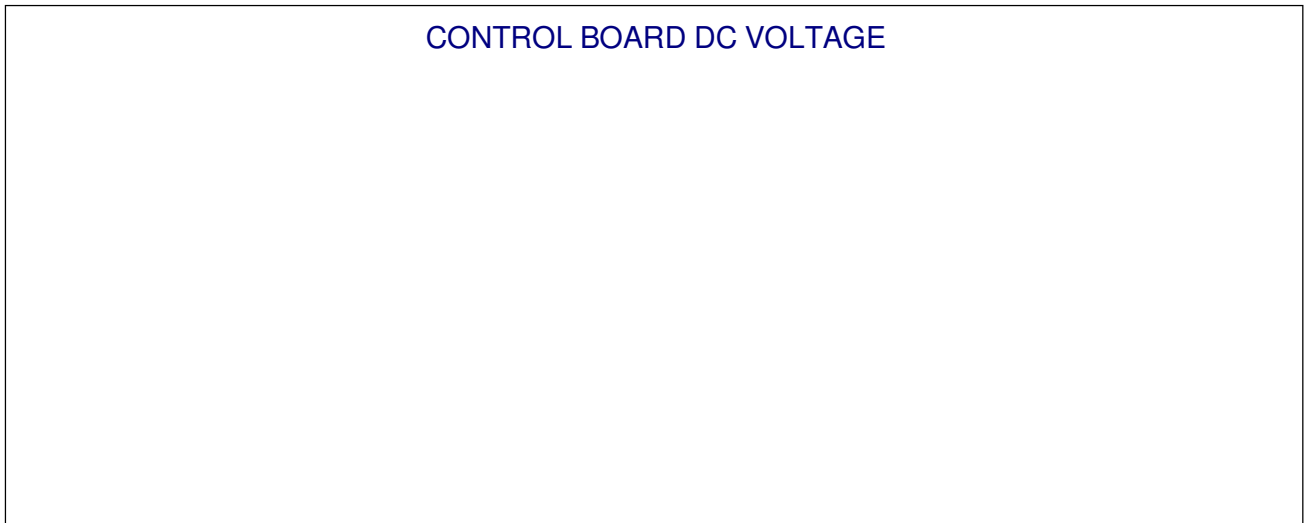
T2I:

T3V-L:

T3I:

CONTROL BOARD DC VOLTAGE

DC Volts



AC Amps

Time (ms)

CONTROL BOARD DC VOLTAGE (in volts):



SYNCHRONOUS MOTOR ROTOR WINDING VOLTAGE DROP TEST



CUSTOMER SAMPLE FORMS COMPANY PAGE _____
 ADDRESS _____ JOB # FORMS-ALL
 USER SAMPLE FORMS COMPANY
 OWNER REPRESENTATIVE _____ TELEPHONE _____
 DATE 5/7/2008 TEMPERATURE _____ °F HUMIDITY _____ % EQPT. LOCATION _____
 SUBSTATION MOTOR CONTROL CENTERS POSITION GENERAL

		TEST HISTORY				
TEST DATE		5/7/2008				
TESTED BY						
OVERLOAD RELAY / HEATERS DELAY @ 300% MFLA	AMPS:					
	@ 3 X AMPS	0				
	A (seconds)					
	B (seconds)					
	C (seconds)					
STARTER CONTACT CONDITION						
STARTER IR @ 1000 VDC (w/starter open)	AA (megohms)					
	BB (megohms)					
	CC (megohms)					
PHASE-TO-PHASE OHMS	AB (ohms)					
	BC (ohms)					
	CA (ohms)					
FEEDER & MOTOR IR @ 1000VDC						
VOLTAGE DROP	BREAKER	A (volts)				
		B (volts)				
		C (volts)				
	TEST SET	A (volts)				
		B (volts)				
		C (volts)				
INSTANTANEOUS PICKUP	A (amps)					
	B (amps)					
	C (amps)					
MCP IR @ 1000VDC (w/open breaker)	AA (megohms)					
	BB (megohms)					
	CC (megohms)					

COMMENTS:

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 DEFICIENCIES:

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EQPT. INVENTORY NO. _____ TESTED BY: _____