

1.0 SCOPE

THIS DOCUMENT COVERS THE D.C. RESISTANCE MEASUREMENTS OF THE FERMILAB MANUFACTURED COILS, MAGNETS, AND OTHER DEVICES PRODUCED BY VENDORS.

2.0 EQUIPMENT USED

- 2.1 VALHALLA 4300B WITH A CURRENT CALIBRATION STICKER.
- 2.2 APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.

3.0 PRETESTING INSTRUMENT SETTINGS

- 3.1 PLACE THE A.C. POWER SWITCH IN THE 'ON' POSITION. ALLOW A 30 MINUTE WARM UP PERIOD.
- 3.2 ENSURE THAT THE TEST CURRENT SWITCH IS IN THE 'OFF' POSITION AND THE TEST CURRENT L.E.D. IS NOT ILLUMINATED.
- 3.3 ENSURE THAT THE TEMPERATURE COMPENSATOR SWITCH IS IN THE 'ON' POSITION AND THAT THE TEMPERATURE COMPENSATOR FAULT INDICATOR L.E.D. IS NOT ILLUMINATED.
- 3.4 ENSURE THAT THE CHARGING INDUCTOR L.E.D. IS NOT ILLUMINATED.
- 3.5 ENSURE THAT THE DISCONNECT STATUS INDICATOR 'SAFE' IS ILLUMINATED.
- 3.6 CONNECT THE INSTRUMENT TEST LEADS TO THE DEVICE TO BE TESTED AS PER DIAGRAM #1.

4.0 INSTRUMENT SETTINGS DURING TESTING

- 4.1 TEST CURRENT SWITCH 'ON' AND TEST CURRENT L.E.D. IS ILLUMINATED.
- 4.2 TEMPERATURE COMPENSATOR 'ON'. TEMPERATURE COMPENSATOR FAULT L.E.D. IS NOT ILLUMINATED.
- 4.3 CHARGING INDUCTOR L.E.D. IS NOT ILLUMINATED.
- 4.4 DISCONNECT STATUS INDICATOR 'UNSAFE' IS ILLUMINATED .
- 4.5 D.C. CURRENT LEVEL AS PER THE APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION
- 4.6 VOLTAGE LEVEL AS PER THE APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.

REV.	DESCRIPTION	DRAWN APPD.	DATE

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECI MALS	ANGLES	DRAWN	D. GAW	8/7/96
*	*	*	CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64 MAX. 2. DONOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD'S.			APPROVED	<i>[Signature]</i>	8/7/96
			USED ON		
<input checked="" type="checkbox"/> MAX. ALL MACHINED SURFACES			MATERIAL		
 FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY					
TS/MAGNET DESIGN & FABRICATION ELECTRICAL INSPECTION PROCEDURE D.C. RESISTANCE, Ls & Q					
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5.0 RECORDS KEEPING

- 5.1 RECORD THE ACTUAL MEASUREMENTS IN THE APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
- 5.2 PERFORM THE NECESSARY REFERENCING OF ACTUAL MEASUREMENTS TO THE LIMITS. SPECIFIED IN APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
- 5.3 IF THE ACTUAL MEASUREMENTS ARE NOT WITHIN THE SPECIFIED LIMITS, INITIATE A DISCREPANCY REPORT.

6.0 POST TESTING INSTRUMENT SETTINGS

- 6.1 ENSURE THAT THE TEST CURRENT SWITCH IS IN THE 'OFF' POSITION AND THE TEST CURRENT L.E.D. IS NOT ILLUMINATED.
- 6.2 ENSURE THAT THE CHARGING INDUCTOR L.E.D. IS NOT ILLUMINATED.
- 6.3 ENSURE THAT THE DISCONNECT STATUS INDICATOR 'SAFE' IS ILLUMINATED.
- 6.4 PLACE THE A.C. POWER SWITCH IN THE 'OFF' POSITION.
- 6.5 DISCONNECT THE INSTRUMENT TEST LEADS FROM THE DEVICE.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECIMALS	ANGLES	DRAWN	D. GAW	8/7/96
"	"	"	CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64 MAX. 2. DONOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's.			APPROVED	<i>[Signature]</i>	8/8/96
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 FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY					
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DIAGRAM #1
VALHALLA 4300B
FOUR (4) WIRE MEASUREMENT

FROM TEST INSTRUMENT
HIGH CURRENT
HIGH VOLTAGE

FROM TEST INSTRUMENT
LOW CURRENT
LOW VOLTAGE



DEVICE UNDER TEST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECIMALS	ANGLES	DRAWN	D. GAW	8/7/96
°	'	°	CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64 MAX. 2. DO NOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD'S.			APPROVED	<i>[Signature]</i>	8/8/96
			USED ON		
<input checked="" type="checkbox"/> MAX. ALL MACHINED SURFACES			MATERIAL		
FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY					
TS/MAGNET DESIGN & FABRICATION ELECTRICAL INSPECTION PROCEDURE D.C. RESISTANCE, Ls & Q					
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7.0 SCOPE

THIS DOCUMENT COVERS THE INDUCTANCE AND QUALITY FACTOR OF THE FERMILAB MANUFACTURED COILS, MAGNETS AND OTHER DEVICES PRODUCED BY VENDORS.

8.0 EQUIPMENT USED

- 8.1 HEWLETT PACKARD 4263A LCR (OR EQUIVALENT) METER WITH CURRENT CALIBRATION STICKER.
- 8.2 APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.

9.0 INSTRUMENT SETTINGS

- 9.1 PLACE THE A.C. POWER SWITCH IN THE 'ON' POSITION. ALLOW A 30 MINUTE WARM UP PERIOD.
- 9.2 MEASUREMENT MODE LS/Q.
- 9.3 VOLTAGE LEVEL ONE (1) VOLT.
- 9.4 TEST FREQUENCY 1 KHZ OR 100 HZ, REFER TO THE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.

10.0 TESTING PROCEDURE

- 10.1 CONNECT THE LEADS TO THE DEVICE TO BE TESTED AS PER DIAGRAM #2.
- 10.2 SELECT THE DESIRED TEST FREQUENCY. THIS CAN BE DONE WITH THE INSTRUMENT MEMORY RECALL FUNCTION. FOR MEASURING AT 1 KHZ, PRESS 'RECALL', PRESS 'ONE' (1) , PRESS ENTER . FOR MEASUREMENTS AT 100 HZ PRESS 'RECALL', PRESS 'TWO' (2), PRESS 'ENTER'. ENSURE THAT THE DESIRED MODE, FUNCTION, VOLTAGE LEVEL AND FREQUENCY ARE DISPLAYED ON THE INSTRUMENT PANEL BEFORE PROCEEDING.

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECIMALS	ANGLES	DRAWN	D. GAW	8/7/96
"	"	"	CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64-MAX. 2. DONOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's.			APPROVED	<i>[Signature]</i>	8/8/96
			USED ON	MATERIAL	
<input checked="" type="checkbox"/> MAX. ALL MACHINED SURFACES			FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY		
TS/MAGNET DESIGN & FABRICATION ELECTRICAL INSPECTION PROCEDURE D.C. RESISTANCE, Ls & Q					
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11.0 RECORDS KEEPING

- 11.1 RECORD THE ACTUAL MEASUREMENTS IN THE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
- 11.2 PERFORM THE NECESSARY REFERENCING OF ACTUAL MEASUREMENTS TO THE LIMITS SPECIFIED IN APPLICABLE TRAVELER OR VENDOR/REQUISITIONER DOCUMENTATION.
- 11.3 IF THE ACTUAL MEASUREMENTS ARE NOT WITHIN THE SPECIFIED LIMITS, INITIATE A DISCREPANCY REPORT.

12.0 POST TESTING INSTRUMENT SETTINGS

- 12.1 PLACE THE A.C. POWER SWITCH IN THE 'OFF' POSITION.
- 12.2 DISCONNECT THE INSTRUMENT TEST LEADS FROM THE DEVICE.

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DIAGRAM #2

HEWLETT PACKARD LCR METER
FOUR (4) WIRE MEASUREMENT

FROM TEST INSTRUMENT
HIGH CURRENT
HIGH VOLTAGE

FROM TEST INSTRUMENT
LOW CURRENT
LOW VOLTAGE



DEVICE UNDER TEST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	W. ISIMINGER	9/17/93
FRACTIONS	DECIMALS	ANGLES	DRAWN	D. GAW	8/7/96
°	°	°	CHECKED	<i>[Signature]</i>	8/8/96
1. BREAK ALL SHARP EDGES 1/64 MAX. 2. DONOT SCALE DWG. 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5STD's.			APPROVED	<i>[Signature]</i>	8/8/96
			USED ON		
<input checked="" type="checkbox"/> MAX. ALL MACHINED SURFACES			MATERIAL		
 FERMI NATIONAL ACCELERATOR LABORATORY U.S. DEPARTMENT OF ENERGY					
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