



INSPECTION REPORT

GENERATOR N° 3417619

Anexo 40-00 Rev 00

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1. GENERATOR DATA

- **SERIAL NUMBER: 3417619**
- **YEAR OF PRODUCTION:**
- **MAKER: ABB**
- **MODEL: M2LG 400 LKD 4/6**
- **RECEPTION DATE: 22/11/2021**

2. BACKGROUND

They do not exist

REPAIR HISTORY:

They do not exist

3. TESTS CARRIED OUT ON RECEIPT OF THE MACHINE TO DETECT THE FAILURE AND ITS RESULTS.

MECHANICAL MEASUREMENT

Bearing cover D.E.

Bearing cover N.D.E.

0°	250 (+0,014)	200 (+0,018)
45°	250 (+0,014)	200 (+0,018)
90°	250 (+0,014)	200 (+0,018)
135°	250 (+0,014)	200 (+0,018)

Shaft D.E.

Shaft N.D.E.

0°	140 (+0,023)	95 (+0,025)
45°	140 (+0,023)	95 (+0,025)
90°	140 (+0,023)	95 (+0,025)
135°	140 (+0,023)	95 (+0,025)

ELECTRICAL MEASUREMENT WINDING 1510 RPM

GROUND INSULATION MEASUREMENT

TEST VOLTAGE: 1.000 V. – 1 min y 10 min.

GROUND RESISTANCE

	1 min	10 min	IP
U	3260 MΩ	5540 MΩ	1,7
V	3260 MΩ	5540 MΩ	1,7
W	3260 MΩ	5540 MΩ	1,7

OHM RESISTANCE

U-X	8,087 mΩ
V-Y	8,098 mΩ
W-Z	8,093 mΩ

DIELECTRIC STRENGTH

TEST VOLTAGE: 2.500 V A/C – 1 min.

U	54,7 mA
V	54,7 mA
W	54,7 mA

RLC MEASUREMENT WITH WAVE COMPARATOR

Values are correct

Resultado de 3PH	Cable 1:	Cable 2:	Cable 3:	Desbalance(%)
HGO				
Resistencia DC	5.4896 m	5.5117 m	5.4615 m	0.9
Temp R corregido	5.4896 m	5.5117 m	5.4615 m	Cu
Temp (degC)	25.0			
Impedancia/Ang	0.241/ 89.0	0.240/ 89.0	0.241/ 89.0	0.1/0.0
Inductancia mH	0.766	0.765	0.766	0.1
Z D/Q	0.017/59.223	0.017/58.313	0.017/59.593	
Frecuencia Hz	50.0			
Capacitancia n155.8				
Cap D/Q	0.021/ 46.8			



ELECTRICAL MEASUREMENT WINDING 1005 RPM

GROUND INSULATION MEASUREMENT

TEST VOLTAGE: 1.000 V. – 1 min y 10 min.

GROUND RESISTANCE

	1 min	10 min	IP
U	2130 MΩ	3840 MΩ	1,8
V	2130 MΩ	3840 MΩ	1,8
W	2130 MΩ	3840 MΩ	1,8

OHM RESISTANCE

U-X	69,12 mΩ
V-Y	69,21 mΩ
W-Z	69,18 mΩ

DIELECTRIC STRENGTH

TEST VOLTAGE: 2.500 V A/C – 1 min.

U	60,5 mA
V	60,5 mA
W	60,5 mA

RLC MEASUREMENT WITH WAVE COMPARATOR

Values are correct

Resultado de 3PH

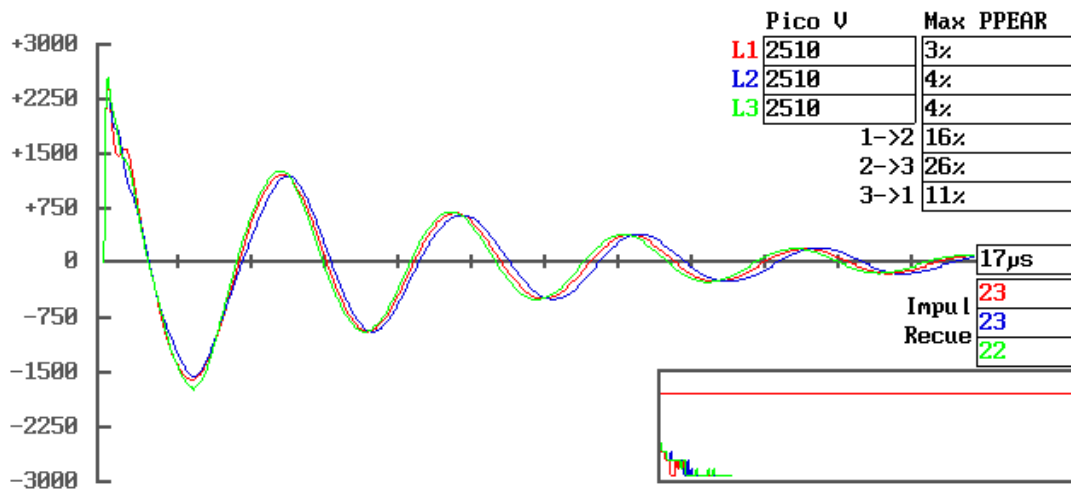
HGO	Cable 1:	Cable 2:	Cable 3:	Desbalance (%)
Resistencia DC	68.7344 m	68.7210 m	68.8466 m	0.1
Temp R corregi	68.7344 m	68.7210 m	68.8466 m	Cu
Temp (degC)	25.0			
Impedancia/Ang	0.590/ 84.5	0.589/ 84.5	0.591/ 84.5	0.1/0.0
Inductancia mH	1.870	1.867	1.871	0.1
Z D/Q	0.096/10.384	0.097/10.339	0.096/10.373	
Frecuencia Hz	50.0			
Capacitancia n	70.7			
Cap D/Q	0.027/ 37.7			



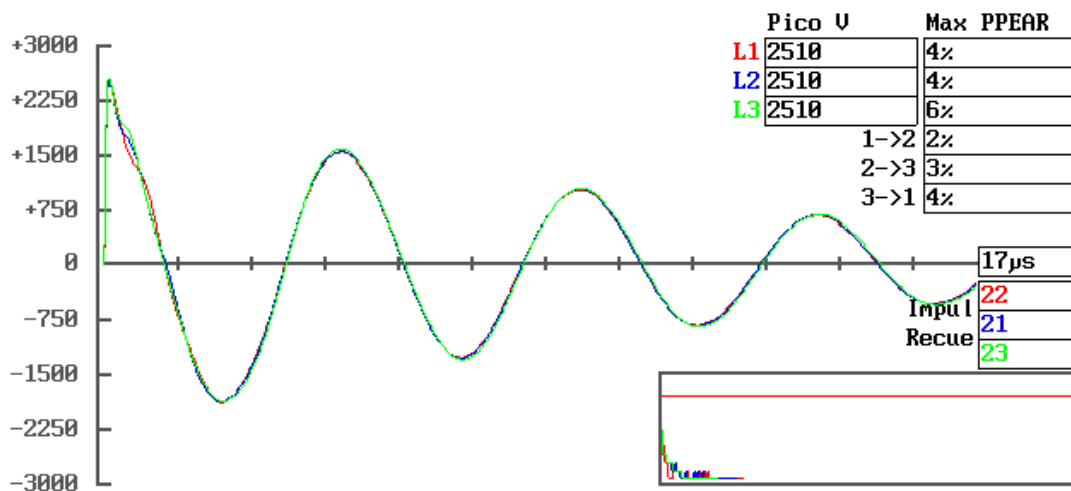
Shock wave:

The shock wave test results have been satisfactory on both windings. The wave patterns recorded are practically identical and show no significant changes in amplitude or frequency between the three phases of the winding. It should be noted that in the 1510 rpm winding the waves have a bit of phase shift due to the fact that the 1008 rpm winding affects it when it is above it.

WINDING 1510 RPM



WINDING 1005 RPM



AUXILIARY ELEMENTS:

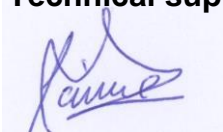

PT100 (Tª 13º)

PT100 (1)	106 Ω	OK
PT100 (2)	106 Ω	OK
PT100 (3)	106 Ω	OK
PT100 (4)	106 Ω	OK
PT100 (5)	106 Ω	OK
PT100 (6)	106 Ω	OK

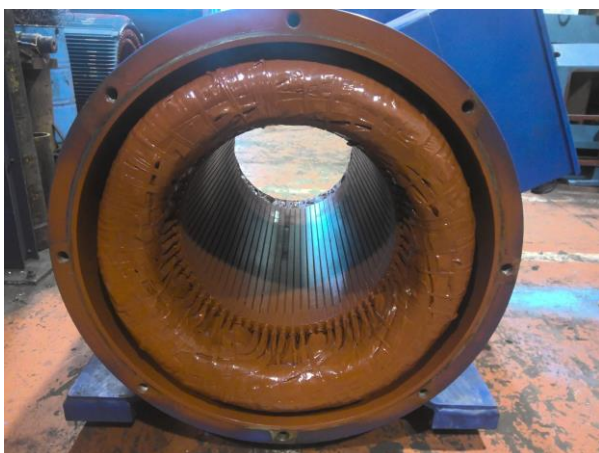
4. DESCRIPTION OF THE DETECTED FAULT

There is no fault

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Technical support		Responsible quality	
J.C.C.		R.U.S.P.	
	03/12/2021		03/12/2021

5. Photographs.



6. ACTIONS TO CARRY OUT AND COMPONENTS TO REPAIR THE MACHINE

Disassembly, parts cleaning, evaluation and report
 Cleaning, drying and varnishing of the windings
 Dynamic balancing
 Bearing replacement 6228-C3 y 6319-C4
 Assembly, painting, electrical tests and final tests on the test bench

9. ESTIMATED REPAIR TIME

2 Weeks

7. EQUIPMENT CALIBRATION

EQUIPMENT SUBJECT TO CALIBRATION

Nº	Denomination	Maker	Calibration date	Next calibration date
1	Insulation meter to earth (megger)	MEGGER	08/01/2020	08/01/2025
2	Balancer and vibration analyzer	PHQ-10000(JP-580)	28/05/2019	28/05/2027
3	Measurer of R, L, C	PROMAX	23/10/2019	23/10/2024
4	TESTER	FLUKE	11/10/2019	11/10/2025
5	Outside micrometer	MITUTOYO	11/10/2019	11/10/2024
6	Inside micrometer	MITUTOYO	25/10/2019	25/10/2024
7	Dielectric strength meter	CHAUVIN ARNOUX	14/02/2016	14/02/2021
8	Phase Rotation Indicator	FLUKE	21/02/2020	21/02/2025
9	Shock wave	BAKER DX 12	28/06/2018	28/06/2025
10	Insulation meter to earth (megger)	CHAUVIN ARNOUX C.A 6555	05/06/2020	05/06/2025
11	Low resistance meter	MEGGER DLRO 10X	19/01/2017	19/01/2022