

REPAIR REPORT

GENERATOR N° 3417619

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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**
- **FINAL TESTS DATE: 09/12/2021**

2. BACKGROUND

They do not exist

REPAIR HISTORY:

They do not exist

3. TEST PROTOCOL

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	7150 MΩ	16400 MΩ	2,3
V	7150 MΩ	16400 MΩ	2,3
W	7150 MΩ	16400 MΩ	2,3

OHM RESISTANCE

U-X	8,085 mΩ
V-Y	8,097 mΩ
W-Z	9,096 mΩ

DIELECTRIC STRENGTH

TEST VOLTAGE: 2.500 V A/C – 1 min.

U	54,6 mA
V	54,6 mA
W	54,6 mA

RLC MEASUREMENT WITH WAVE COMPARATOR

Values are correct

Resultado de 3PH

HGO	Cable 1:	Cable 2:	Cable 3:	Desbalance(%)
Resistencia DC	5.4096 m	5.5117 m	5.4615 m	0.9
Temp R corregi	5.4096 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 n	155.8			
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	6970 MΩ	16700 MΩ	2,4
V	6970 MΩ	16700 MΩ	2,4
W	6970 MΩ	16700 MΩ	2,4

OHM RESISTANCE

U-X	68,91 mΩ
V-Y	68,97 mΩ
W-Z	68,88 mΩ

DIELECTRIC STRENGTH

TEST VOLTAGE: 2.500 V A/C – 1 min.

U	59,9 mA
V	59,9 mA
W	59,9 mA

RLC MEASUREMENT WITH WAVE COMPARATOR

Values are correct

Resultado de 3PH

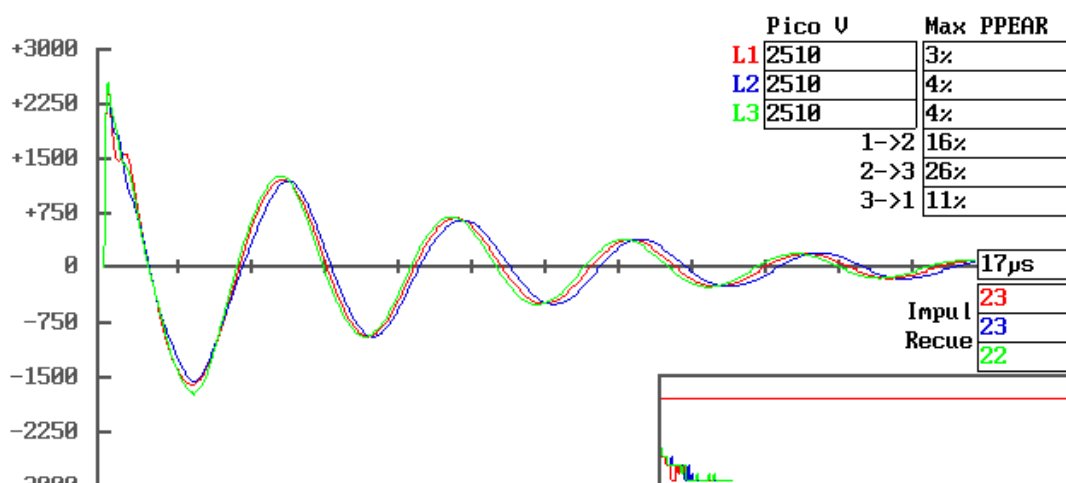
HGO	Cable 1:	Cable 2:	Cable 3:	Desbalance(%)
Resistencia DC	68.7344 m	68.7210 m	68.8466 m	0.1
Temp R corregi	68.7344 m	68.7210 m	68.8466 m	Cu
Temp (degC)	25.0			
Impedancia/Ang	0.590/ 84.5	0.589/ 84.5	0.591/ 84.5	0.1/0.0
Inductancia mH	1.870	1.867	1.871	0.1
Z D/Q	0.096/10.384	0.097/10.339	0.096/10.373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



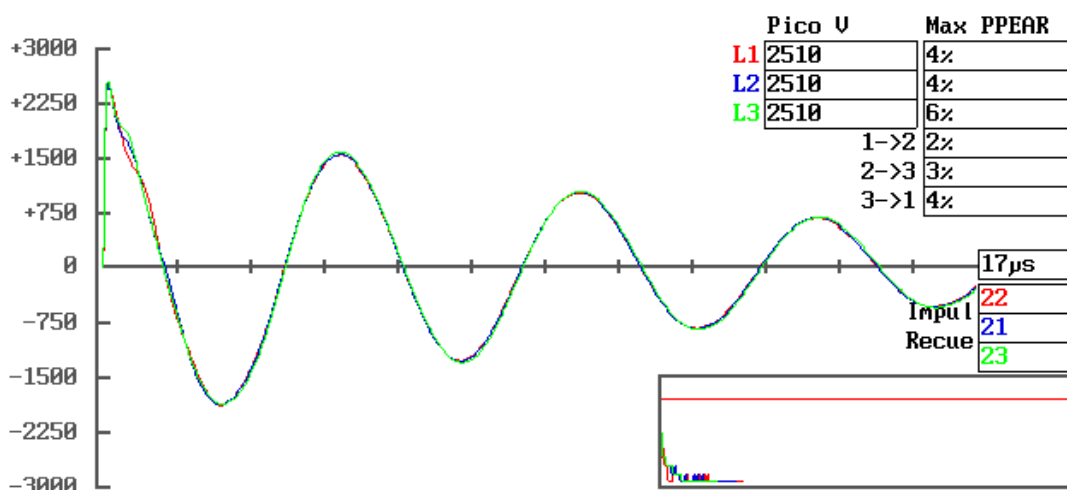
Shock wave:

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



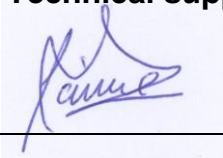

WINDING 1005 RPM



AUXILIARY ELEMENTS:

PT100 (Tª 15º)

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

Technical support		Responsible quality	
J.C.C.		R.U.S.P.	
	09/12/2021		09/12/2021

DYNAMIC BALANCING REPORT

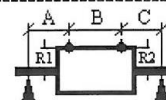
Masa (kg) 974

Parámetro del plano de equilibrio

A = 190.0 mm B = 840.0 mm C = 255.0 mm

R1= 110.0 mm

R2= 110.0 mm



Criterio de Calificación

El grado de equilibrio del rotor es G2.5

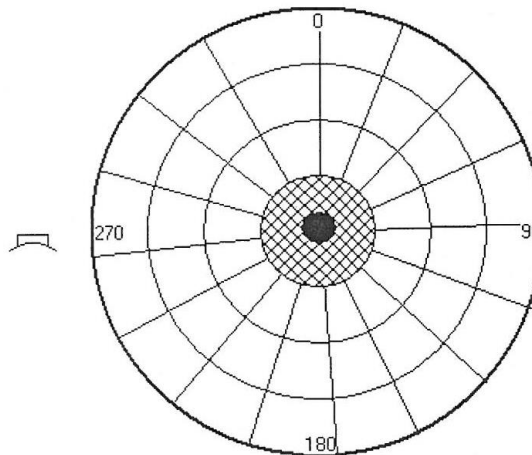
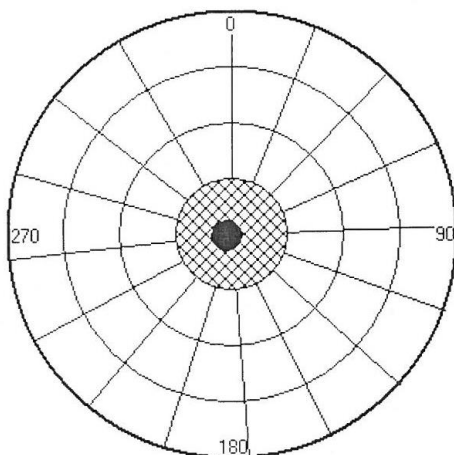
Cantidad desequilibrada permitida de plano izquierdo = 70.00 g

Cantidad desequilibrada permitida de plano derecho = 70.00 g

Cantidad de desequilibrio estático permitido = 140.0 g

Datos de prueba

	Rev	Masaizqui.	Faseizqui.	Masadere.	Fasedere.	Masaestático	Faseestático
	r/min	(g)	(deg)	(g)	(deg)	(g)	(deg)
Medición datos	399	7.096	250	4.818	352	7.763	288



Resultado

calificado

VIBRATIONS 1510 RPM

	D.E.	N.D.E.
HORIZONTAL	0,7 mm/s	0,8 mm/s
VERTICAL	0,6 mm/s	0,7 mm/s
AXIAL	0,3 mm/s	0,3 mm/s

VIBRATIONS 1005 RPM

	D.E.	N.D.E.
HORIZONTAL	0,6 mm/s	0,7 mm/s
VERTICAL	0,4 mm/s	0,5 mm/s
AXIAL	0,3 mm/s	0,3 mm/s

4. CCHECKING JOBS

- Painting OK
- Input shaft free of treatment and protected with antioxidant oil or similar
- Zones close to the silentblock and ground connection free of paint
- Sanitary couplings and components
- Chavet
- Check terminal box and auxiliary elements
- Others (specify): The generator does not have antifreeze.

1. PHOTOGRAPHS.

MOBILITH SHC-100 grease-greased bearings





2. 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