

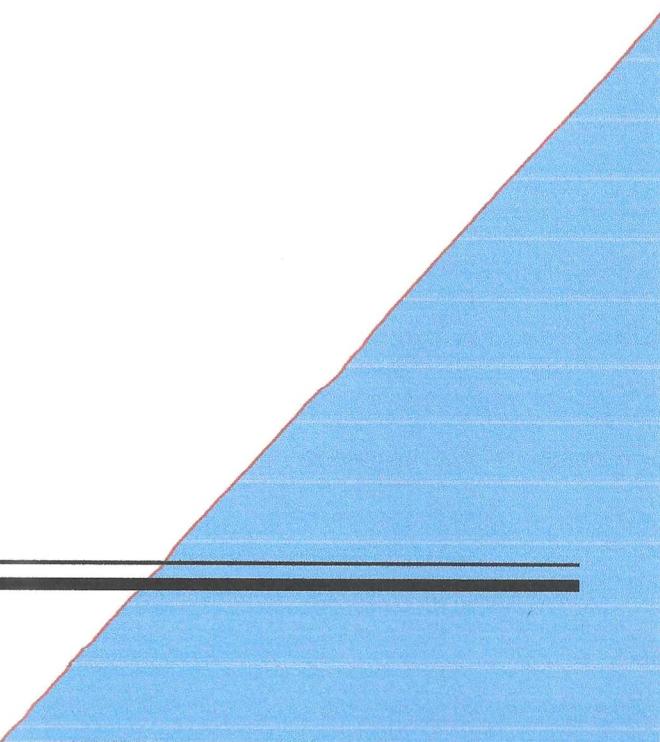
SITE ACCEPTANCE TEST

AEG TRANSFORMER

S.N : 307720-01 (2281A)

25 MVA 11.5/6 kV Dyn11

[PT. PETROKIMIA GRESIK]



SITE ACCEPTANCE TEST REPORT



TRAFOINDO POWER

PT. TRAFOINDO POWER INDONESIA

a Trafoindo and Siemens Energy company

Brand : AEG	Connection : Dyn11	Date of test 24 th of January, 2024
Serial No. : 307720-01 (2281A)	Transformer : 25 MVA 11.5/6 kV	

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Tested by:	Checked by:	Witnessed by :	
PT. Trafoindo Power Indonesia		PT. Aflah Azaria	PT. Petrokimia Gresik
Elans Maulana	Syaiful. F		

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Brand	: AEG	Connection	: Dyn11	
Serial No.	: 307720-01 (2281A)	Transformer	: 25 MVA 11.5/6 kV	Date of test 24 th of January, 2024

Transformer Turns Ratio Primary – Secondary

Instrument : CPC 100
 Brand : OMICRON
 Serial Number : TD083A
 Voltage Test : 150 V

Tap	Nom. ratio	Phase R		Phase S		Phase T	
		TTR	Ratio dev	TTR	Ratio dev	TTR	Ratio dev
1	3,4858	3,4935	0,22 %	3,4942	0,24 %	3,4936	0,22 %
2	3,4029	3,4062	0,10 %	3,4063	0,10 %	3,4062	0,10 %
3	3,3198	3,3185	-0,04 %	3,3183	-0,05 %	3,3184	-0,04 %
4	3,2369	3,2302	-0,21 %	3,2307	-0,19 %	3,2306	-0,19 %
5	3,1538	3,1602	0,20 %	3,1605	0,21 %	3,1605	0,21 %

Passed Criteria : < 0.5 %

Refference : IEC 60076-1

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Silans Maulana	Syaiful. P		

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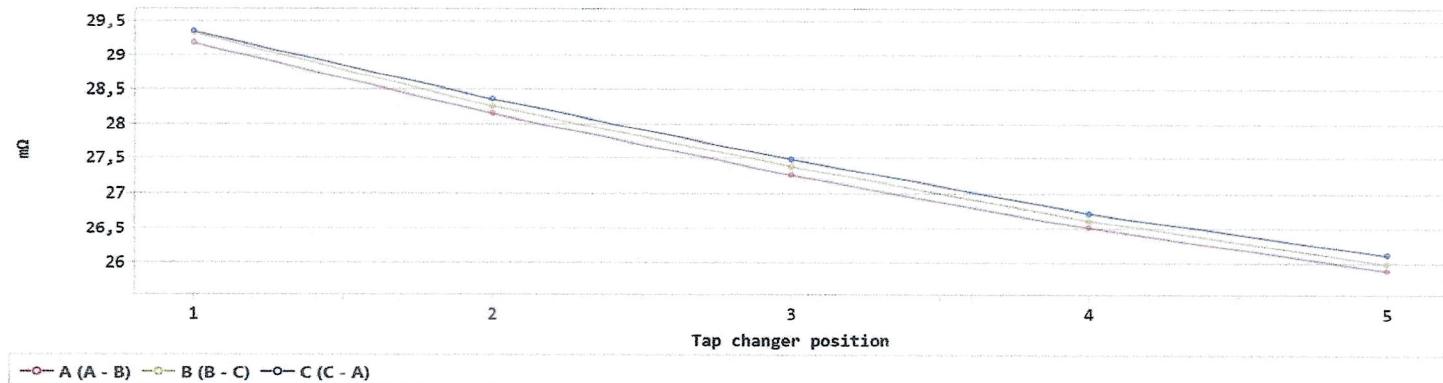
Brand	: AEG	Connection	: Dyn11	Date of test 24 th of January, 2024
Serial No.	: 307720-01 (2281A)	Transformer	: 25 MVA 11.5/6 kV	

Measurement Of Winding Resistance Primary

Instrument : CPC 100
 Brand : OMICRON
 Serial Number : TD083A
 Current Test : 5 A

Tap	PHASE R (R - S)			PHASE S (S - T)			PHASE T (T - R)		
	R meas	R dev	R corr	R meas	R dev	R corr	R meas	R dev	R corr
1	25,411 mΩ	0,079 %	29,172 mΩ	25,538 mΩ	0,079 %	29,317 mΩ	25,556 mΩ	0,091 %	29,338 mΩ
2	24,511 mΩ	0,084 %	28,138 mΩ	24,605 mΩ	0,083 %	28,247 mΩ	24,698 mΩ	0,094 %	28,353 mΩ
3	23,740 mΩ	0,085 %	27,253 mΩ	23,849 mΩ	0,086 %	27,379 mΩ	23,934 mΩ	0,080 %	27,477 mΩ
4	23,096 mΩ	0,090 %	26,515 mΩ	23,192 mΩ	0,094 %	26,624 mΩ	23,281 mΩ	0,050 %	26,727 mΩ
5	22,556 mΩ	0,085 %	25,895 mΩ	22,637 mΩ	0,073 %	25,988 mΩ	22,747 mΩ	0,066 %	26,114 mΩ

DC Winding Resistance



Passing Criteria : < 0.5 %

Reference : IEC 60076-1

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Brand : AEG

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Connection : Dyn11

Transformer : 25 MVA 11.5/6 kV

Date of test
24th of January, 2024

Measurement Of Winding Resistance Secondary

Instrument : CPC 100
 Brand : OMICRON
 Serial Number : TD083A
 Test Current : 5 A

PHASE r (r - n)				PHASE s (s - n)				PHASE t (t - n)			
Tap	R meas	R dev	R corr	R meas	R dev	R corr	R meas	R dev	R corr	R meas	R dev
	2,067 mΩ	0,095 %	2,372 mΩ	2,055 mΩ	0,092 %	2,359 mΩ	2,078 mΩ	0,054 %	2,386 mΩ		

Passed Criteria : < 0.5 %

Refference : IEC 60076-1

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Lilans Maulana	Syaiful F		

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Brand : AEG

Serial No. : 307720-01 (2281A)

Connection : Dyn11

Transformer : 25 MVA 11.5/6 kV

Date of test
24th of January, 2024

Measurement Of Dissipation Factor (Tan Delta Winding)

Instrument : CPC 100 & CPTD1
Brand : OMICRON
Serial Number : TD083A & QD790W

• HV Side	
Corr. temperature	39 °C
Corr. Factor 20°C	0.66
* Reference voltage	5,0 kV

No.	Meas.	Test mode	Freq.	V out	* I out	* Watt losses	DF meas	DF corr	Cap. meas
1	ICH+ICHL	GST	50,00 Hz	5,00 kV	40,60 mA	1648,00 mW	0,4059 %	0,2679 %	12921,8 pF
2	ICH	GSTg-A	50,00 Hz	5,00 kV	6,50 mA	496,51 mW	0,7640 %	0,5042 %	2065,6 pF
3	ICHL	UST-A	50,00 Hz	5,00 kV	34,10 mA	1129,37 mW	0,3312 %	0,2186 %	10854,6 pF

• LV Side	
Corr. temperature	39 °C
Corr. Factor 20°C	0.66
* Reference voltage	5,0 kV

No.	Meas.	Test mode	Freq.	V out	* I out	* Watt losses	DF meas	DF corr	Cap. meas
4	ICL+ICLH	GST	50,00 Hz	3,00 kV	58,26 mA	2449,08 mW	0,4204 %	0,2774 %	18542,8 pF
5	ICL	GSTg-A	50,00 Hz	3,00 kV	24,16 mA	1332,21 mW	0,5515 %	0,3640 %	7686,1 pF
6	ICLH	UST-A	50,00 Hz	3,00 kV	34,10 mA	1118,74 mW	0,3281 %	0,2165 %	10855,0 pF

Tested by:	Checked by:	Witnessed by:
PT. Trafoindo Power Indonesia		
Bambang Mantara	Syaiful. f	

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Connection : Dyn11
Transformer : 25 MVA 11.5/6 kV

Date of test
24th of January, 2024

DIRANA Test

Instrument : DRA 2
Brand : OMICRON
Serial Number : GA646X

Name	CHL
Moisture in cellulose	1,7 %
Moisture category	dry
Moisture saturation	4,5 %
Bubbling inception temperature	161,0 °C
Compens. of aging by-products	yes
Oil conductivity	7,9 pS/m
Oil conductivity @ 20°C	4,0 pS/m
Oil category	good
Max. stop frequency reached	yes

Channel	CH1
Capacitance @ 50 Hz	10,846 nF
Capacitance @ 60 Hz	10,844 nF
Tan δ / power factor @ 50 Hz	0,32% / 0,32%
Tan δ / power factor @ 60 Hz	0,30% / 0,30%
C (10 mHz) / C (50 Hz)	2,306
Barriers (X)	21 %
Spacers (Y)	23 %
Polarization index	2,324
DAR	1,431

Moisture categories

dry	< 2,2%
moderately wet	≥ 2,2% and < 3,7%
wet	≥ 3,7% and < 4,8%
extremely wet	≥ 4,8%

Oil categories

very good	< 3 pS/m
good	≥ 3 pS/m and < 20 pS/m
satisfactory	≥ 20 pS/m and < 57 pS/m
unsatisfactory	≥ 57 pS/m

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Gilang Maulana	Syaiful F		

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Serial No.	: 307720-01 (2281A)	Transformer	: 25 MVA 11.5/6 kV	Date of test 24th of January, 2024

Insulation Resistance & Polarization Index

Instrument : Resistance Measurement
 Brand : SANWA
 Voltage : 5000 VDC

Minute	HV – E	HV – LV	LV – E
1	980 MΩ	774 MΩ	818 MΩ
2	1.12 GΩ	1.02 GΩ	994 MΩ
3	1.19 GΩ	1.13 GΩ	1.01 GΩ
4	1.23 GΩ	1.22 GΩ	1.16 GΩ
5	1.25 GΩ	1.28 GΩ	1.21 GΩ
6	1.27 GΩ	1.34 GΩ	1.26 GΩ
7	1.28 GΩ	1.38 GΩ	1.29 GΩ
8	1.30 GΩ	1.42 GΩ	1.33 GΩ
9	1.31 GΩ	1.45 GΩ	1.35 GΩ
10	1.32 GΩ	1.48 GΩ	1.37 GΩ
PI	1.35	1.91	1.68

Polarization Index (PI)	Insulation Condition
< 1	Dangerous
1.0 - 1.1	Poor
1.1 - 1.25	Questionable
1.25 - 2.0	Fair
Above 2.0	Good

Test Result : **Good** / **Not Good**

Standard : IEC 60076-1

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Sams Maulana	Syaiful F		

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Serial No.	:	307720-01 (2281A)	Transformer	:	25 MVA 11.5/6 kV	

Protection Check

Instrument : Function Test
Brand : SANWA

No.	Device or Accesories	Terminal No		Result	Remark
1.	Oil Temperature Indicator (OTI)	X1	1 – 5 10 – 17	OK	Alarm Trip
2.	Winding Temperature Indicator (WTI)	X1	2 – 6 11 – 18	OK	Alarm Trip
3.	Bucholz Relay Main Tank	X1	3 – 7 12 – 19	OK	Alarm Trip
4.	Pressure Relief Device Main Tank	X1	13 – 20	OK	Trip
5.	Oil Level Indicator	X1	1 – 2 1 – 3	OK	Max/High Min/Low

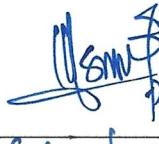
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Serial No. : 307720-01 (2281A)	Transformer : 25 MVA 11.5/6 kV	Date of test 24 th of January, 2024

ATTACHMENTS



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Gilang Maulana	Syaiful. F		