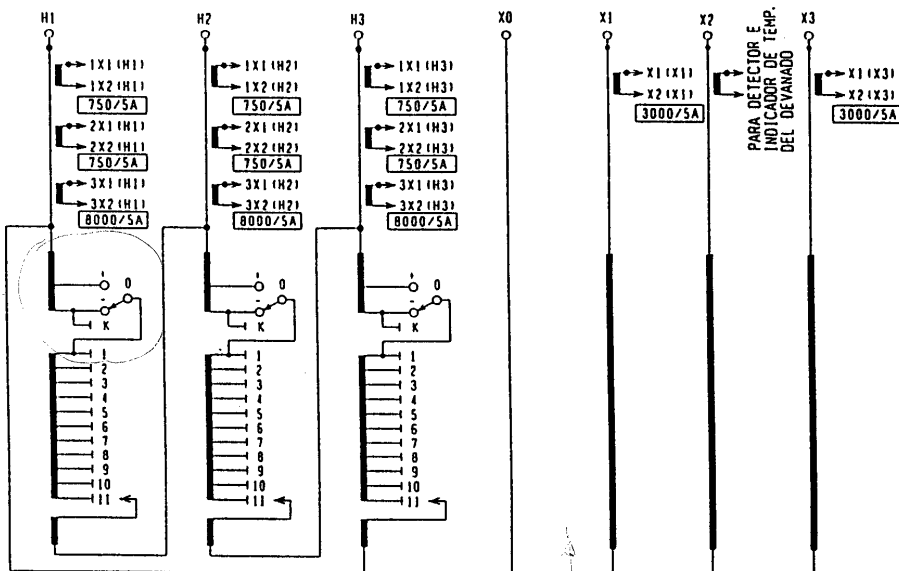


TRANSFORMADOR

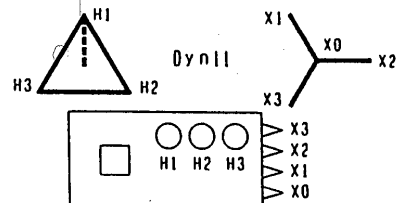
CON CAMBIADOR DE DERIVACIONES BAJO CARGA

15000	kVA	ANSI C57.12.00-1987	MODELO	CR-NRH
50	Hz	TIPO NUCLEO	CLASE	0A
TRIFASICO		CAPACIDAD CONTINUA	ACEITE	
A. T.	15000 V	NIVEL BASICO DE IMPULSO	TRANSFORMADOR	9000 Q
	577 A	A. T.	CAMBIADOR DE TOMAS	250 Q
B. T.	6300 V	B. T. LINEA Y NEUTRO	PESO	
	1370 A	ELEVACION DE TEMP.	NUCLEO Y BOBINAS	11600 Kg
L-SPEC	HB61365	ACEITE	TANQUE Y ACCESORIOS	10100 Kg
NUM. DE SERIE	9783671101	DEVANADOS	ACEITE	8300 Kg
IMPEDANCIA	8.02 %	FECHA	TOTAL	30000 Kg
IMPEDANCIA DE SECUENCIA CERO			PESO DE TRANSPORTE	17100 Kg
TIPO Y FABRICANTE DEL CAMBIADOR DE TOMAS BAJO CARGA : NRH / MELCO				
ALTURA MAXIMA DE INSTALACION SOBRE EL NIVEL DEL MAR = 1000 m				
ALTURA DE IZAADO PARA DESENCUBIR LA PARTE ACTIVA. INCLUYENDO ESTROBOS = 6 m				
EL ESTANQUE, RADIADOREW Y CONSERVADOR DE ACEITE RESISTEN VACIO ABSOLUTO				



VOLT	AMP	POSICION	CONEXIONES SELECTOR DE DERIVACIONES	CONMUTADOR
16880	513	0	1	
16690	519	1	10	
16500	525	2	9	
16310	531	3	8	
16130	537	4	7	
15940	543	5	6	
15750	550	6	5	
15560	557	7	4	
15380	563	8	3	
15190	570	9	2	
15000	577	10	1	
14810	585	11	10	
14630	592	12	9	
14440	600	13	8	
14250	608	14	7	
14060	616	15	6	
13880	624	16	5	
13690	633	17	4	
13500	642	18	3	
13310	651	19	2	
13120	660	20	1	

MANUAL DE INSTRUCCIONES N° : SDT-L.1420



COLOCACION DE TERMINAL

TRANSFORMADOR DE CORRIENTE

POSICION	RELACION	CARGA	CLASE DE EXACTITUD	FUNCION
H1, H2, H3	750/5A	50VA	5P10	87UTS
H1, H2, H3	750/5A	50VA	5P10	50/51UTG
H1, H2, H3	8000/5A	50VA	5P10	87GMS
X1, X3	3000/5A	50VA	5P10	90
X2	1370 / 5.5-5.0-4.5-4.0-3.2A	45VA	CLASE 3	IMAGEN TERMICA



MITSUBISHI ELECTRIC CORPORATION
JAPAN

SW23734

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TESTED BY

M. Cant

TRANSFORMER TEST REPORT

Serial No. 9783671101

Measurement of Impedance and Load Loss [AT-BT]

Temp. 24 °C

Pos.	Tap voltage	Current (A)	Impedance voltage		Load loss (W)
	Meas. side / Short side		(V)	(%)	
0	16880 / 6300	513	1268	7.51	66740
1	16690 / 6300	519	1255	7.52	67310
2	16500 / 6300	525	1245	7.55	67720
3	16310 / 6300	531	1249	7.66	68620
4	16130 / 6300	537	1243	7.70	69290
5	15940 / 6300	543	1228	7.71	69610
6	15750 / 6300	550	1219	7.74	70570
7	15560 / 6300	557	1215	7.81	71370
8	15380 / 6300	563	1218	7.92	72240
9	15190 / 6300	570	1214	7.99	72960
10	15000 / 6300	577	1202	8.01	73360
11	14810 / 6300	585	1165	7.87	74360
12	14630 / 6300	592	1157	7.91	75020
13	14440 / 6300	600	1163	8.06	76370
14	14250 / 6300	608	1160	8.14	77250
15	14060 / 6300	616	1149	8.17	77970
16	13880 / 6300	624	1141	8.22	78730
17	13690 / 6300	633	1144	8.35	80020
18	13500 / 6300	642	1156	8.56	81890
19	13310 / 6300	651	1158	8.70	83080
20	13130 / 6300	660	1155	8.80	83920

Measurement of zero-sequence impedance at 15,000kVA base

Wdg.	Rated voltage (kV)	Rated current (A)	Impedance voltage		
			(V)	(%)	Ω/phase
BT	6.3 / $\sqrt{3}$	1370 × 3	286	7.86	0.209

MITSUBISHI ELECTRIC CORPORATION

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TESTED BY  

TRANSFORMER TEST REPORT

Calculation of load loss at 85°C

Serial No. 9783671101

Basic capacity (kVA)				15,000	15,000	15,000
Tap No.				0	10	20
Tap voltage (KV)	AT	side		16.88	15.00	13.13
	BT	side		6.3	6.3	6.3
Winding resistance (85 °C)	AT	winding (Ω)		0.4543	0.4022	0.3533
	BT	winding (Ω)		0.02083	0.02083	0.02083
I ² R loss (85 °C)	AT	winding	Current (A)	513/√3	577/√3	660/√3
			Loss (W)	39,850	44,630	51,300
	BT	winding	Current (A)	1,370	1,370	1,370
			Loss (W)	39,100	39,100	39,100
	Total I ² R loss (W)			78,950	83,730	90,400
Load loss (W)	Load loss measured		24.0 °C	66,740	73,360	83,920
	I ² R loss calculated		24.0 °C	63,880	67,740	73,140
	Stray loss	24.0 °C	2,860	5,620	10,780	
		85.0 °C	2,310	4,540	8,720	
	I ² R loss calculated		85.0 °C	78,950	83,730	90,400
	Load loss		85.0 °C	81,260	88,270	99,120

Calculation of efficiency at 85 °C

Calculation of efficiency at 85 °C

Tap voltage (KV)		15.0 / 6.3			
Load (%)		100	75	50	25
Capacity (KVA)		15,000	11,250	7,500	3,750
Losses (W)	No-load loss		11,230	11,230	11,230
	Load loss		88,270	49,650	22,070
	Total losses		99,500	60,880	33,300
Efficiency (%) at p.f.= 1.0		99.34	99.46	99.56	99.56

Calculation of impedance at 85°C

Frequency (H z)		50	50	50
Tap voltage (k V)		16.88 / 6.3	15.00 / 6.3	13.13 / 6.3
Capacity (k V A)		15,000	15,000	15,000
IZ% at 24.0 °C		7.51	8.01	8.80
IR% at 24.0 °C		0.44	0.49	0.56
IX%		7.50	8.00	8.78
IR% at 85.0 °C		0.54	0.59	0.66
IZ% at 85.0 °C		7.52	8.02	8.81

Calculation of regulation at 85°C

Frequency (H z)		50	50	50
Tap voltage (k V)		16.88 / 6.3	15.00 / 6.3	13.13 / 6.3
Capacity (k V A)		15,000	15,000	15,000
p.f = 1.0	IR%		0.54	0.59
	(IX%) ² / 200		0.28	0.32
	Regulation (%)		0.82	0.91

SLC

TESTED BY *M. Carr*