

ELECTRICAL CHARACTERISTICS OF THREE-PHASE
OIL TRANSFORMER

ELECTRIC DATUM	VALUE	UNIT
Rated power	2250 (2x1125)	KVA
Primary tension	6.3±2x2.5%	KV
Primary current	206.2	A
Insulation class	7.2 / 20 / 60	KV
Primary terminals number	3	
Insulation thermal class	A	
Overtemperature primary wind.	60	°K
Secondary tension	1903 - 1903	V
Secondary current	341 - 341	A
Insulation class	3.6 / 10 / 40	KV
Secondary terminals number	6	
Insulation thermal class	A	
Overtemperature secon. wind.	60	°K
Short circuit voltage	6 - 6	%
Frequency	50	Hz
Vectorial group	Dy11/d0	
Cooling	ONAN	
No-load losses - 100%Vn	3000	W
Load losses (75°) - 100%Vn	19500	W
Oil weight	1100	kg
Total transformer weight	5950	kg
Designed ambient temperat.	45	°C

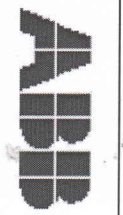


FLSmith Automation
Order: ATAP5D04
Item: E431S2T24

Transformer data
2250
6.3±2x2.5%/2x1.903
Dy11/d0
4850 (without oil)
5950 (with oil)

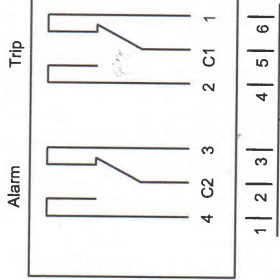
N. disegno:	Data	Disegnato	Controllato
MF271_06-04			
Rev.			
00	18/05/06	Landi M.	Ing. Festa
01	05/12/06	Landi M.	Ing. Festa
02			
03			

N. app.	Scale
04	/
05	

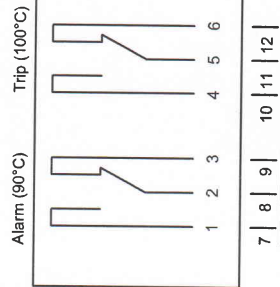


AS BUILT

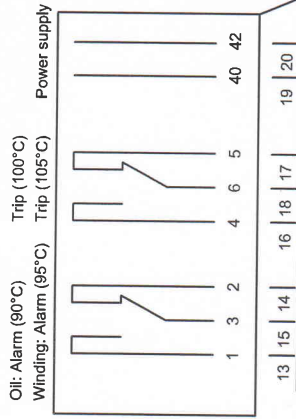
BUCHHOLZ RELAIS



THERMOMETER

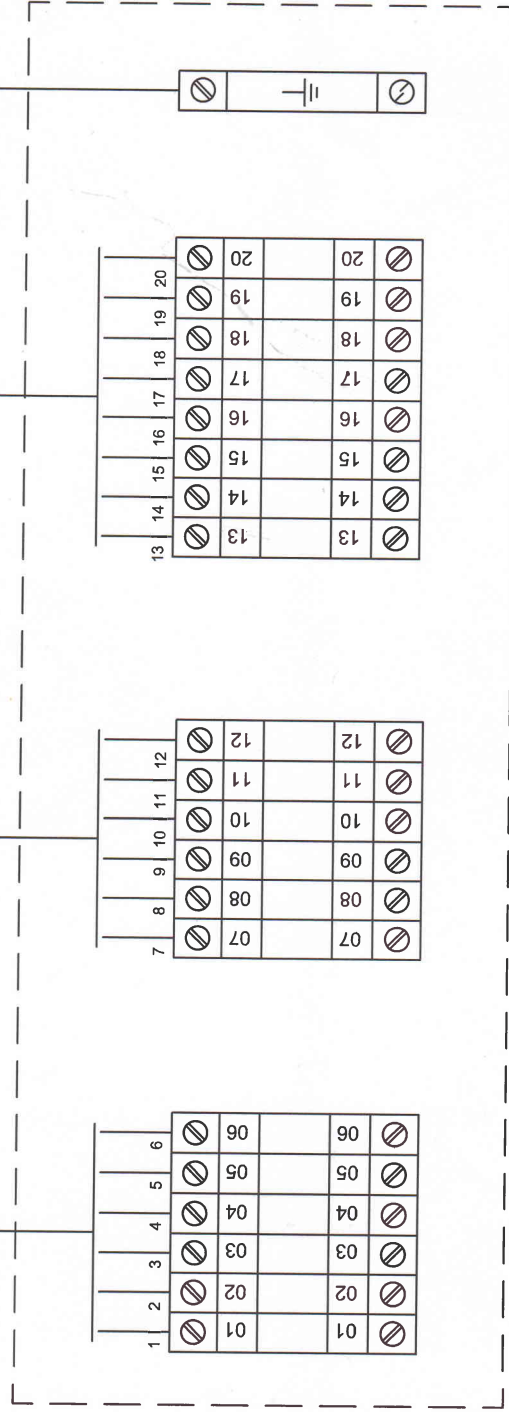


THERMAL IMAGE



Note:

- d.t. (temperature gradient): 5°C
- c.t. (current transformer): 5A
- t.c. (time constant): 60min.



AUXILIARY CIRCUITS BOX ON TRANSFORMER



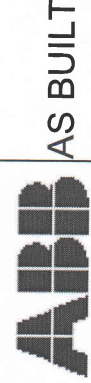
FLSmidth Automation
 Order: ATAP5D04
 Item: E431S2T24

Transformer data
 2250
 6.3±2x2.5%/2x1.903
 Dy11/d0
 4850 (without oil)
 5950 (with oil)

kVA
 kv
 kg
 kg

N. disegno:	MF271_06-03
Rev.	00
Date	18/05/06
Disegnato	Landi M.
Controllato	Ing. Festa
Ing. Festa	
Landi M.	
Landi M.	



Scale	/
N. pag.	03
Page out	05



AS BUILT

EQUIPMENT LIST

ITEM	DESCRIPTION	N°	MAKER	TYPE
01	H.V. Terminal	03	COMEM	DIN42531-68 12kV/250A
02	L.V. Terminal	06	COMEM	DIN42530-68 3kV/630A
03	Oil level indicator	01	COMEM	L100
04	Lifting eyebolts	02	SALFER	120x120 Ø60
05	Earthing plate	02	SALFER	40x40 Ø13
06	Oil drain valve	01	MF	COSMOS 1"1/2
07	Thermometer pocket	02	SALFER	
08	Buchholz relay with valves	01	COMEM	C01
09	No-load tap changer	01	CAPT	
10	Thermometer	01	TERMAF	
11	Silicage	01	COMEM	
12	Conservator	01	SALFER	
13	Bi-directional wheel	04	MF	Ø200 - L=80
14	Auxiliary circuits box	01	MF	
15	Rating plate / Name plate	02	SERGEN	
16	Mineral oil	1100	BERGOIL	TRANSAG G11
17	Electrical screen	01	MF	
18	Thermal image	01	TECSYSTEM	
19	Terminal box of CT signal for thermal image	01	ETI	

	FLSmidth Automation Order: ATAP5D04 Item: E431S2T24		Transformer data 2250 6.3x2x2.5%/2x1.903 Dy11/d0 4850 (without oil) 5950 (with oil)		N. disegno: MF271_06-02 Data 18/05/06 05/12/06		Disegnato Landi M. Landi M.		Controllato Ing. Festa Ing. Festa		Scale / N. pag. 02 Pag. nr. 05
											

TEST CERTIFICATE

Test Certificate No. 011206/6	Serial Nr. 011206/6	Project Nr. 22500TORO6,3/2x1,903
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RATED POWER	2250	kVA	TYPE	OIL	
H.V. VOLTAGE	6,3 ±2x2,5%	kV	L.V. VOLTAGE	2 x 1903	V
H.V. CURRENT	206,2	A	L.V. CURRENT	2 x 341,3	A
INSULATION CLASS	7,2 20 60	kV	INSULATION CLASS	3,6 10 40	kV
SHORT CIRCUIT VOLTAGE	7	%	FREQUENCY	50	Hz
CONNECTIONS	D y11 d0		TOTAL WEIGHT	5950	kg
			OIL WEIGHT	1100	kg

VISUAL CHECK

Dimensional check **OK**

Overall dimensions: checked against the drawing MF_271_06 page 01

AUXILIARY CHECK

OPERATION OF AUXILIARY COMPONENTS AND FUNCTIONAL CHECK

- 1- Thermometer **OK**
- 2- Buchholz relay **OK**
- 3- Thermal image **OK**
- 4- Insulation resistance **1,95 GOhm at 2500 V d.c.**

Checked against the drawing MF_271_06 page 02

Reference: IEC 76. IEC 726

DATA: 01/03 REVISIONE: 0 SCHEDA: S-36IN

Authorized Manager's Name and Signature Ing. FESTA	Date 05/12/06	Stamp MF TRASFORMATORI S.r.l.
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Authorized Manager Name and Signature 	Date 05/12/06	Stamp MF TRASFORMATORI S.R.L.
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Insulation testing		Winding resistance measurement																																			
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Load losses - short-circuit voltage, impedance									
U 1-2-3 V	k= 1,73	142,4	247	61,54	117,5	61,2	240	138,6	153,8
A1	k= 1	266,4	116,9	61,48	61,17	117,2	61,28	142,4	153,8
A2	k= 1	61,17	117,2	61,48	61,17	117,2	61,28	142,4	153,8
A3	k= 1	61,66	117,2	61,48	61,17	117,2	61,28	142,4	153,8
Am	k= 1	61,46	117,2	61,48	61,17	117,2	61,28	142,4	153,8
W	k= 1	5641							
		d	d + y	y					
		6,57	7,46	6,41					
		Pcc=	20658	Ucc= 7,46 %					
		Pcc=	19500	Ucc= 7 %					
		Contractual							
		Measured							
		With temperature							
		75 °C							
		Supply:							
		HV	HZ: 50	temp: 15 °C					

No-load losses and no-load current measurement									
U 1-2-3 V	k= 1,73	1107,0	1917	2,27	1,84	2,14	2,08	3040	10% = 0,31
A1	k= 1	3040							
A2	k= 1	3040							
A3	k= 1	3040							
Am	k= 1	3040							
W	k= 1	3040							
		Po=							
		Po=							
		Contractual							
		Measured							
		Supply:							
		LV	HZ: 50	temp: 15 °C					

Transformer ratio measurement			
Step tap-changer	H.V. (Volt)	L.V. (Volt)	d Ratio value
+	6615	1903	3,482
+	6458	1903	3,395
0	6300	1903	3,309
-	6143	1903	3,222
-	5985	1903	3,135
-	5451	1903	3,135

RATED POWER	2250	TYPE	OIL
H.V. VOLTAGE	6,3 ±2x2,5%	L.V. VOLTAGE	2 x 1903
H.V. CURRENT	206,2	L.V. CURRENT	2 x 341,3
INSULATION LEVEL	7,2 20 60 kV	INSULATION LEVEL	3,6 10 40 kV
SHORT CIRCUIT VOLTAGE	7 %	FREQUENCY	50 Hz
CONNECTIONS	D y11 d0	TOTAL WEIGHT	5950 kg
		OIL WEIGHT	1100 kg

Test Certificate Nr.	011206/6	Serial Nr.	011206/6
Project Nr.	22500TORO6,3/2x1,903		

TEST CERTIFICATE FOR OIL TRANSFORMER

271/06

Directive 89336/ECC

DECLARATION of CONFORMITY

No. 1194/06

The Company MF Trasformatori Srl

DECLARES THAT

the transformer 460TORO6,3/2x0,725 No. 011206/9

Type

OIL

**Respects the electromagnetic compatibility prescriptions
directive 89336/EEC**

with Reference to the standards
EN50081-1 Electromagnetic compatibility emissions
EN50082-1 Electromagnetic compatibility immunity

CE marking apposition year 1996

Authorized Manager's Name and Signature

MF TRASFORMATORI S.r.l.

Ing. Festa R.

Date

05/12/06