

Windings	1	2	3	4	5	6	7	8	9	10
Groups	2	2	2	2	1					
Circuits	41	41	41	41	4					
Connection	1	1	1	1	1					
H/Voltage/A	1 100 0	1 100 0	1 100 0	1 100 0	1 20207055					
	.	.	.	.	.					
	.	.	.	.	.					
	.	.	.	.	.					
	.	.	.	.	.					
	.	.	.	.	.					
H/Current/A	1 4 0	2 4 0	3 4 0	5 5 0	5 85 120					
	1 1340 0	1 1340 0	1 1340 0	1 1340 0	.					
	.	.	.	.	.					
	.	.	.	.	.					
	.	.	.	.	.					
	.	.	.	.	.					
Time1 min.	60	60	60	60	60					
Load1 *	1	1	1	1	1					
Time2 min.	60	60	60	60	0					
Load2 *	1	1	1	1	0					
Sectors	2	2	2	2	1					
Ser./Para.	2	2	2	2	1					
Wire file	6	6	6	6	5					
Cu/Al	1	1	1	1	1					
In/Layer μ	100	100	100	100	200					
Type/Tran.	10	10	10	10	20					
Typ/L/C mm	3 5 15	2 5 6	2 5 6	2 5 6	6 5 15					
Typ/L/C mm	3 5 15	2 5 6	2 5 6	2 5 6	6 5 15					
Typ/L/I mm	2 10 5	2 10 5	2 10 5	2 10 5	2 1 6.5					
Margin mm	50	50	50	50	75					
RacRdc	1.2	1.2	1.2	1.2	1.1					

Frequency Hz: 50	Core select. -: Created	Cooling medium : Oil	CHANGED IN TEST
Criterion : Ucca	Core file : LTCM_E10_3_L	Amb. temperature °C: 25	Frequency Hz: 50
Ucc-voltage act. %: 1.1	Core name : DT_1600kVA_2	Convection outside *: 1	Ambient temperature C: 40
Ucc-voltage tot. %: 6.4	Core assembly: (7) 4x45°+3x9	Convection inside *: 1	Convection/outside *: 1
Temperat. rise °K: 25	With hole -: No	Emission *: 1	Convection/channels *: 1
Max. Fe losses %: 0.2	Steel file : STEEL1.RDS	Airflow outside m/s: 0	Emission *: 1
No-load factor %: 1.3	Steel name : M 97-30 => M	Airflow inside m/s: 0	Ventilation/outside m/s: 0
I ⁱⁿ /I ^{nom} : 10	Induction T: 1.6	Min.oil temp.rise °K: 15	Ventilation/channel m/s: 0
I _{rms} on/I _{rms} nom : 10	W/kg *: 1		Rth-Insulation *: 1
Losses at temp.°C: 75	UAr/kg *: 1		Rth-Varnish *: 1
HU-Test volta. kU: 85	Airgap *: 1	Channel fill factor %: 80	Rth-Compound *: 1
LU-Test volta. kU:	f/fn-Factor *: 1	Varnish in windings %: 100	Fillfactor/channels %: 80
HU-Mom.voltage kU: 35	Fill factor : 1	Varnish in gaps %: 100	Varnish in windings %: 100
LU-Testvoltage kU:	Annealed -: Yes	Rth-varnish *: 1	Varnish/gaps/stomack %: 100
Cu Price per kg : 2		Rth-compound *: 1	Stomack mm: 1.00
Al Price per kg : 2		Rth-insulation *: 1	Gap mm: 0.10
Fe Price per kg : 1		Coil insulation mm: 0	
		Stomach mm: 1	
		Gap mm: 0.1	
		Min.distance W-W mm: 30	
		Flange mm: 0	

#*0

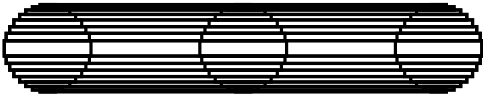
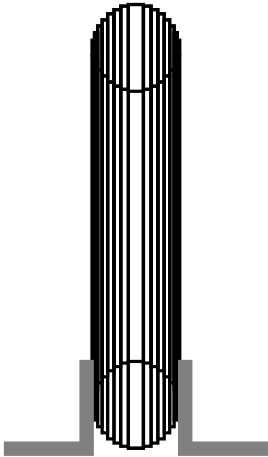
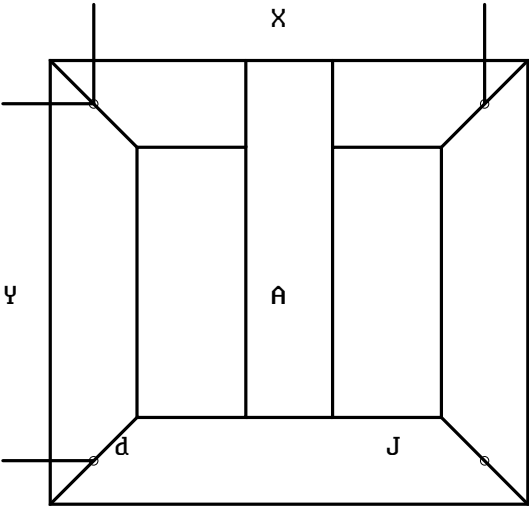
DIAGNOSIS

Page 0

Name	:DT_1600kVA_260mm			
Steel	:M 97-30 => M5 0.012" 30G150			
Number of phases	-:3			
Number of legs	-:3			
Wight total/Cu/Fe	kg:2573.3	=655.8	+16918	
Max.build of windings	%:79.0			
max.wires in parrallel	:1	=1	X 1	/6
Induction on load	T:1.583			
No-load induction	T:1.593			
Max. CuAl-dT on load	°K:36.3			
Max. Fe-dT on load	°K:29.1			
Regulation	%:1.268			
Short-circuit voltage cold	%:6.77	Ucx=6.72	Ucr=1.113	
Efficiency	%:98.823			
Iinrush/Inom max/rms	*: 3.68 / 2.84			
No-load current factor	%: 0.5			

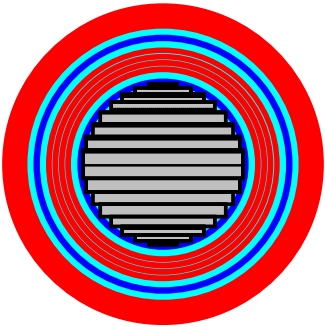
Core file name	: LTCM_EI0_3_L_1.USR	Fe-File name	: STEEL1.RDS
Core name	: DT_1600kVA_260mm	Fe-Name	: M 97-30 => M5 0.012" 3
Core type	: 3EI	Frequency	Hz: 50
Type of windings	: round	Remanence-Factor	*: 0.35
Number of legs	: 3	W/kg-Factor	*: 1
Core assembly	: (7) 4x45°+3x9	UAr/kg-Factor	*: 1
Leg/Diameter	cm: 25.89	Gap-Factor	*: 1
Window width	cm: 32	f/fn-Factor	*: 1
Window height	cm: 79.49	Fillfactor	*: 1
Stack	cm: 25.7	Annealed	-: Yes
Cross section	cm^2: 478.6		
Weight total	kg: 1917.		
With holes	-: Yes	Chassis	-:
Brackets	-: L-T&B	Vertical/Horizontal	-:

		Steps	1	2	3	4	5	6	7	8	9	10
X-Width	cm: 115	A-Leg	cm:25.5	24.5	22.5	20	16.5	13	9	4.5	0	0
Y-Height	cm: 105	J-Yoke	cm:25.5	24.5	22.5	20	16.5	13	9	4.5	0	0
d_Hole	cm: 2.55	R-Rearyoke	cm:0	0	0	0	0	0	0	0	0	0
h-Distance	cm: 2.55	S-Stack	cm:4.5	2.2	2	1.9	1.6	1.3	1	0.6	0	0
L-Laenght	cm: 25.5	Number lamin.	:									
Z-Width	cm: 0	Weight	kg:									



Windings	1	2	3	4	5	6	7	8	9	10
Groups-Circuits	2-Yn	2-Yn	2-Yn	2-Yn	1-Y					
Connection	ser.	ser.	ser.	ser.	ser.					
Turns per leg	6.0	6.0	6.0	6.0	1200.0					
Build	%	15.31	21.76	28.22	34.67	79.02				
Weight per leg	kg	21.11	22.53	23.95	25.37	125.64				
WIRE										
Type	Foil	Foil	Foil	Foil	flat					
Thicknes	mm	0.60	0.60	0.60	0.60	1.00				
Width	mm	350.00	350.00	350.00	350.00	8.00				
WG-thicknes		0	0	0	0	10				
WG-width		0	0	0	0	80				
Al/Cu	Cu	Cu	Cu	Cu	Cu					
STRAND/LITZ							7			
Thickne insula.	mm	0.60	0.60	0.60	0.60	1.06				
Width insulata.	mm	350.0	350.0	350.0	350.0	8.1				
Parallel wires		1	1	1	1	1				
side by side		1	1	1	1	1				
one upon the other		1	1	1	1	1				
Transposition	Cyl	Cyl	Cyl	Cyl	Disc					
Cross section	mm^2	210.0	210.0	210.0	210.0	8.0				
SECTOR										
Number	2	2	2	2	1					
Serie/Parallel	par.	par.	par.	par.	ser.					
Turns	6	6	6	6	1200					
Turns/Layer	1	1	1	1	44					
Layers	6	6	6	6	27.27					
Insul./Layer	µm	100.0	100.0	100.0	100.0	200.0				
Transposition	None	None	None	None	None					
Thicknes	mm	4.20	4.20	4.20	4.20	35.08				
Height	mm	350.00	350.00	350.00	350.00	645.00				
Heights Wind/Sect	6	6	6	6	0.983					
SPACES/CHANNELS/INS.										
C/I Outside	WICW	WCW	WCW	WCW	WCICW					
Insulation	mm	5.0	5.0	5.0	5.0	5.0				
Channel	mm	15.0	6.0	6.0	6.0	15.0				
C/I Inside	WICW	WCW	WCW	WCW	WCICW					
Insulation	mm	5.0	5.0	5.0	5.0	5.0				
Channel	mm	15.0	6.0	6.0	6.0	15.0				
C/I Horizontal	CC	CC	CC	CC	CC					
Sector-Sector	mm	10.0	10.0	10.0	10.0	1.0				
Turn-Turn	mm	5.0	5.0	5.0	5.0	6.5				
Distance to yoke	mm	42.5	42.5	42.5	42.5	75.0				

Coil insulation mm: 0.00 Diatancw coil to coil : 66.30
D1i/D1e: 298.9 307.3
D2i/D2e: 319.3 327.7
D3i/D3e: 339.7 348.1
D4i/D4e: 360.1 368.5
D5i/D5e: 438.5 508.7
D6i/D6e: /
D7i/D7e: /
D8i/D8e: /



Water Cooling
Cooling power W: 0
Coolertemper. gradC: 0.
Watertemper. gradC: 50.
Pipe diameter mm: 10.0
Water speed. m/s: 1.00
Water t. rise gradK: 0.0
Pressure drop mBar: 0.0
Insul.thicknfs mm: 0.00
Insul. condu. W/Kmm: 0.15
Cooler position -: 0.0

Windings	1	2	3	4	5	6	7	8	9	10
Test voltage kU:	4.0	4.0	4.0	5.0	85.0					
Outside of window										
Space type	ig-	-g-	-g-	-g-	gig					
Insulation mm:	5.0	0	0	0	5.0					
Eac.rms isol. kU/mm:	1.6	0.0	0.0	0.0	1.3					
Eabd.ac isol. kU/mm*	18.1	0.0	0.0	0.0	18.1					
Gap mm:	15.0	6.0	6.0	6.0	15.0					
Eac.rms gap kU/mm:	0.3	0.7	0.7	0.8	2.9					
Ebd.ac in gap kU/mm*	9.2	9.7	9.6	9.6	9.0					
Epd.ac in gap kU/mm*	5.4	7.4	7.4	7.4	5.4					
Ecb.ac in gap kU/mm*	4.8	7.3	7.3	7.3	4.8					
INSIDE of window										
Space type	ig-	-g-	-g-	-g-	gig					
Insulation mm:	5.0	0	0	0	5.0					
Eac.rms isol. kU/mm:	0.0	0.0	0.0	0.0	0.0					
Ebd.rms isol. kU/mm*	0	0	0	0	0					
Gap mm:	15.0	6.0	6.0	6.0	15.0					
Eac.rms gap kU/mm:	0.0	0.0	0.0	0.0	0.0					
Ebd.ac in gap kU/mm*	0	0	0	0	0					
Epd.ac in gap kU/mm*	0	0	0	0	0					
Ecb.ac in gap kU/mm*	0	0	0	0	0					
MARGIN -----										
Coil to yoke mm:	42.5	42.5	42.5	42.5	75.0					
Tube over coil mm:	-15.0	-15.0	-15.0	-15.0	70.1					
Yoke Insulation mm:	2x2mm	2x2mm	2x2mm	2x2mm	2x2mm					
Eg in gap kU/mm:	0.09	0.09	0.09	0.12	1.13					
Creeping mm*	0.0	0.0	0.0	0.0	170.2					
BIL-----										
Pulse voltage kU:	0.0	0.0	0.0	0.0	120.0					
Sections -:	2	2	2	2	1					
Uolage/Section kU:	0.0	0.0	0.0	0.0	120.0					
L. or D./Section :	6.0	6.0	6.0	6.0	27.3					
Voltage/L.or D. kU:	0.0	0.0	0.0	0.0	4.4					
E /screen kU/mm:	4.4	4.4	4.4	4.4	4.4					
Q screen uC:	0.0	0.0	0.0	0.0	0.0					
Qp to ground uC:	0.0	0.0	0.0	0.0	12.5					
Qs /turns uC:	0.0	0.0	0.0	0.0	0.2					
((Qp-Qscr)/Qs)^1/2 :	0.0	0.0	0.0	0.0	8.8					
axVoltsge t-t U:	0	0	0	0	879					

RECOMMENDED SPACING in mm for dry transformrs and fhe test boltsge in kU/1 min/50Hz

Test voltage	a01	d01	t01	l01	e01	a12	d12	l12	l02	e02
3	10	2x0.5	5	15	22	10	2x0.5	5	15	22
10	14	2.6	10	130	50	15	2.5	10	20	50
16	27	5	25	55	90	22	4	25	45	90
14	10	6	40	90	120	40	5	40	90	120

Power/Test RECOMMENDED SPACING in mm for oil transformrs and fhe test boltsge in kU/1 min/50Hz

kVA/kU	a01	d01	t01	l01	e01	a12	d12	l12	l02	e02
25-630/ 5	4-5	2x0.5	-	15	-	-	-	-	-	-
1000-2500/ 5	15	4	6	15	--	-	-	-	-	-
<5000/18 25 35	8-18	4	6	20-50	25-60	8-18	4	10-25	20-50	25-60
45	20	85.0	10	50	80	20	5	25	50	80
55	25	5	13	55	90	25	5	35	55	90
85	4.00	6	19	75-80	115	30	6	40	75-80	115