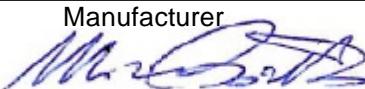


GBE S.p.A. TEST REPORT

Order		Customer VESTFOLD TRAFO ENERGI AS								
Type	ER3O24.1250	Serial Number 20528_3		Phase 3		KVA	1.250			
Voltage ratio (V)	22.000-	11.000 +2- 4 X 2,50 % /		415 -		50 Hz				
Connection	Dyn11									
Currents	32,80	- 65,61 / 1.739,01 -								
Insulation Class	A	/ A		Temperature Class 65 °C / 65 °C						
Voltage ratio					Insulation test					
Pos.	Theoretical	U Measured	V Measured	W Measured	Voltage test applied to the primary against secondary and ground:					
7	82,64	82,48	82,48	82,48	Test voltage 50000 V t = 60 Sec Result: POSITIVE					
6	84,93	84,79	84,79	84,79	Voltage test applied to the secondary against primary and ground:					
5	87,23	87,11	87,11	87,11	Test voltage 3000 V t = 60 Sec Result: POSITIVE					
4	89,52	89,42	89,42	89,42	Induced voltage test					
3	91,82	91,73	91,73	91,73	Supplied voltage 830 V f = 100 Hz t = 60 Sec Result: POSITIVE					
2	94,11	94,05	94,05	94,05						
1	96,41	96,36	96,36	96,36						
					Note					
3	45,91	45,87	45,87	45,87						
Measurement of no-load loss and current										
Winding supply :		Secondary	Measured at 415,0 V		Frequency 50 Hz					
Voltage K =		1	Current K		1	K W = 1	Note			
VMuv	VMuw	VMvw	VMm	Iu	lv	Iw	Averag	W tot		
415,11	415,09	416,57	415,59	2,67	2,04	2,77	2,49	939,91		
I0 = 0,14 %				P0 = 939,91 W						
Winding resistance measurement, Voltamperometric method										
Primary winding		22.000 V	Secondary winding		415 V					
Terminals	Volt	Amp.	Ohm	Terminals	mVolt	Amp.	mOhm			
1U1V	9,0176	3,7280	2,4189	2U2V	11,9907	14,9850	0,8002			
1U1W	9,0158	3,7303	2,4169	2U2W	11,9249	14,9851	0,7958			
1V1W	9,0388	3,7015	2,4419	2V2W	11,9991	14,9850	0,8007			
Average resistance (20,0 C°)	2,4259 Ohm	Average resistance (20,0 C°)		0,7989 mOhm						
Average resistance		Average resistance								
Measurement of short circuit impedance and load loss										
Winding supply :		Primary		A Current	32,80 A	Frequency				
Voltage K =		1	Current K		1	K W = 1	Note			
Vuv	Vuw	Vvw	Vm	Iu	lv	Iw	Averag	W tot		
1.311,	1.304,	1.311,	1.309,	30,64	30,68	30,48	30,60	7.692,64		
Determination of short circuit impedance and load loss										
Ratio	22.000 / 415 V	Primary winding		Aluminium		Secondary winding				
Ambient temperature	20,0 °C	Reference temperature		75 °C	K Temp	1,22 /	1,22			
Vcc at rated current	1.403,73 V	Rln % = Rlp % * KTemp		0,87 %	Ohmic losses primary windings					
Zlp % = (VCC/VNcc)*100 =	6,38 %	Xln % = Xlp %		6,34 %	Ohmic losses secondary					
Rlp % (WCup/PN)*100	0,71 %	Zln % = ((Xln%)² + (Rln%)²) =		6,40 %	Additional losses					
Xlp % = ((Zlp%)² - (Rlp%)²) ½	6,34 %	Load losses		10294,9 W						
Pcc at rated current	8840,8 W									
Efficiency			Voltage drop (%)							
load	Cos F = 0,8	Cos F = 1	Cos F = 0,8	Cos F = 1						
100 %	98,889 %	99,109 %	4,568 %	1,023 %						
75 %	99,111 %	99,287 %	3,407 %	0,730 %						
50 %	99,302 %	99,441 %	2,259 %	0,462 %						
Tests carried out according to IEC 60076 Standards.										
Instrument used Norma D5255 and Norma 4000.										
The transformer is delivered with the following ratio										
11.000 / 415 V										
Customer				Manufacturer						
						Date 27/10/2023				