GBE S.p.A. TEST REPORT

Order — Customer VESTFOLD TRAFO ENERGI AS

Type ED3H01.0500 — Serial Number 15923.1 — Phase 3 — KVA 500

Voltage ratio (V) 400 - ± X % / 230 - — 50 Hz

Connection YNd11

Currents 721,69 - / 1.255,11 -

Insulation Class F / F — Temperature Class 100 °C / 100 °C

Voltage ratio

Pos.	Theoretical	U Measured	V Measured	W Measured
	1,004	1,004	1,004	1,004

Insulation test

Voltage test applied to the primary against secondary and ground:

Test voltage 3000 V t = 60 Sec Result: POSITIVE

Voltage test applied to the secondary against primary and ground:

Test voltage 3000 V t = 60 Sec Result: POSITIVE

Induced voltage test

Supplied voltage 460 V f = 100 Hz t = 60 Sec Result: POSITIVE

Note

Measurement of no-load loss and current

Winding supply : Primary — Measured at 400,0 V — Frequency 50 Hz

Voltage K = 1 — Current K 1 — K W = 1 — Note

VMuv	VMuw	VMvw	VMm	Iu	Iv	Iw	Averag	W tot
400,77	399,79	400,93	400,50	2,78	3,16	3,35	3,10	877,00

I0 = 0,43% — **P0 = 877,00 W**

Winding resistance measurement, Voltamperometric method — **t. amb. : 17 C°** — Note

Primary winding			400 V	Secondary winding			230 V
Terminals	mVolt	Amp.	mOhm	Terminals	mVolt	Amp.	mOhm
1U1V	54,3788	14,9320	3,6418	2U2V	8,2043	14,9897	0,5473
1U1W	54,0062	14,9325	3,6167	2U2W	8,1961	14,9898	0,5468
1V1W	54,3302	14,9321	3,6385	2V2W	8,1708	14,9898	0,5451
Average resistance	(17,0 C°)	3,6323 mOhm		Average resistance	(17,0 C°)	0,5464 mOhm	
Average resistance				Average resistance			

Measurement of short circuit impedence and load loss

Winding supply : Primary — A Current 721,69 A — Frequency 50 Hz

Voltage K = 1 — Current K 1 — K W = 1 — Note

Vuv	Vuw	Vvw	Vm	Iu	Iv	Iw	Averag	W tot
11,17	10,80	11,03	11,00	348,50	337,92	341,33	342,58	1.075,16

Determination of short circuit impedance and load loss

Ratio 400 V / 230 V	Primary winding Aluminium		Secondary winding Aluminium
Ambient temperature	17,0 °C	Reference temperature 120 °C	K Temp 1,43 / 1,43
Vcc at rated current	23,17 V	RIn % = RIp % * KTemp 1,36 %	Ohmic losses primary windings 4.045,5 W
ZIp% = (VCC/VNcc)*100 =	5,79 %	XIn% = XIp% 5,71 %	Ohmic losses secondary 1.840,6 W
RIp % (WCup/PN)*100	0,95 %	ZIn % = ((XIn%)² + (RIn%)²) = **5,87 %**	Additional losses 450,7 W
XIp % = ((ZIp%)²-(RIp%)²) ½	5,71 %	**Load losses 6336,9 W**	
Pcc at rated current	4771,4 W		

Efficiency

load	Cos Φ =0,8	Cos Φ =1
100 %	98,228 %	98,578 %
75 %	98,541 %	98,829 %
50 %	98,784 %	99,025 %

Voltage drop (%)

Cos Φ =0,8	Cos Φ =1
4,525 %	1,430 %
3,381 %	1,042 %
2,245 %	0,675 %

Note

Tests carried out according to IEC 60726 and IEC 60076 Standards

Instrument used Norma D5255 and Norma 4000

The transformer is delievered with the following ratio 400 / 230 V

Customer

Manufacturer

GBE S.p.A. TEST ROOM

Date 06/03/2020