



Noratel AS - Norway

Certificate for 1 Phase Dry Type Transformer

Customer: Jatec AS	Your ref.:	Purchase Order: 2722287
Type: 2LT16-23		Serial no.:
Rated power: 10000 VA	Load.: 100 %	Art. no.: 3-080-000714
Pcs.: 2	Total weight: 113 Kg.	
According to.: IEC-60726/60076	Temp. class: F	Amb.temp.: 45 °C Reference temp.: 95 °C
Primary: 670-690-710 Volt	Primary: 15.48-15.03-14.6 Amp.	50 Hz
Secondary: 3000-3150-3300 Volt	Secondary: 3.03 Amp.	
1. Measurement of winding resistance at ambient temp.: 23 °C Measurement resistance of primary at terminals; AB (1U-1V): .1614 ohm Measurement resistance of secondary at terminals; ab (2U-2V): 8.5 ohm		
2. Measurement of voltage ratio and check of phase displacement Input voltage at terminals; AB (1U-1V): 670 Volt Measurement of voltage ratio at terminals; ab (2U-2V): 3056 Volt Ratio: .219		
3. Measurement of short-circuit impedance and load loss at ambient temp.: 23 °C Measurement impedance voltage, Ez: 5.19 Volt at : 50 % of rated current and rated freq. The supplied current is: 7.74 average Amp. Measurement copper loss, CuW: 30.73 Watt at : 50 % of rated current and rated frequency. Short circuit terminals is: 2U-2V Impedance voltage (Ez) and load loss (CuW) corrected to 100 % of the rated current and reference temp.: 95 °C Short circuit resistance, Er: 1.57 % Short circuit reaktance, Ex: .94 % Short circuit impedance, Ez: 1.84 % Copper loss at 100% load (CuW): 157.4 Watt		
4. Measurement of no-load loss and current Primary rated voltage and rated frequency at terminals; AB (1U-1V): 670 Volt Measurement of no-load current at terminals; AB (1U-1V): 1.68 Amp. Primary no-load loss (FeW): 198.9 Watt		
Total losses at 100% load and reference temperature (FeW + CuW): 356.3 Watt		
Percentage efficiency at Powerflow 1.0, and 1/4 load: 91.79 %	Percentage efficiency at Powerflow 1.0, and 2/4 load: 95.3 %	
Percentage efficiency at Powerflow 1.0, and 3/4 load: 96.23 %	Percentage efficiency at Powerflow 1.0, and 4/4 load: 96.5 %	
Percentage efficiency at Powerflow 0.8, and 1/4 load: 89.77 %	Percentage efficiency at Powerflow 0.8, and 2/4 load: 94.15 %	
Percentage efficiency at Powerflow 0.8, and 3/4 load: 95.3 %	Percentage efficiency at Powerflow 0.8, and 4/4 load: 95.65 %	
5. Separate-source voltage withstand test Between LV and HV coil: 10 KV AC in: 60 sec. Between HV and core/casing/frame: 0 KV AC in: 60 sec. Between LV and core/casing/frame: 0 KV AC in: 60 sec.		
Between LV and HV coil: 1 KV megger: 200 M ohm Between HV and core/casing/frame: 1 KV megger: 200 M ohm Between LV and core/casing/frame: 1 KV megger: 200 M ohm		
6. Induced overvoltage withstand test min. 2 x Rated voltage: 1.3 KV AC in: 20 sec.		
DATE: 19.08.2015	MADE BY: F.K.	DATE: REV.: DATE: APPROVED: DOC. NO.: 3-080-000714-2722287-TR01