
Addendum # 10

SF-36000/115kV
(Ynd1)

SF-36000/115kV
(Vector group : YNd1)
Power Transformer Technical

Energy Parts Solutions

Environmental conditions

1.- Sea level < 1000m

2.- Max ambient temperature: $\pm 40^{\circ}\text{C}$

Max year average ambient temperature: $+20^{\circ}\text{C}$

3.- System highest voltage:

H.V. side: 126 kV L.V. side: 17.5 kV

4.- Frequency: 60 Hz

5.- Leakage distance per unit withstand voltage of H.V. side and H.V. neutral point side ≥ 2.5 cm/kV (Count according to system highest voltage)

Leakage distance per unit withstand voltage of L.V. side ≥ 2.5 cm/kV (Count according to system highest voltage)

6.- Termination method

H.V. side: bushings outlet to overhead wire,

L.V. side: bushings outlet to copper bar.

Technical parameters sheet

Item	Name		Guarantee value
1	Name of product		Three phase double windings off load tap change power transformer
2	Rated power	Primary Rated power(MVA)	36
		Secondary Rated power(MVA)	36
3	Cooling method		ONAF
3	Rated voltage	(kV) Primary voltage	115
		(kV) Secondary voltage	13.8
4	Tapping range		115±2*2.5%
5	Tap changer		Off load tap changer WDT □ 400/110-6×5
6	(%) Impedance		12 (36MVA) Tolerance permitted: ±7.5%
7	Vector group		YNd1
8	Rated frequency		60
9	Temperature Rise	(K) Winding	65
		(K) Top Oil	55
		(K) Core and other structure	80

10	Rated insulation level inside Winding	H.V. Side (kV)	Peak value of Impulse test (Full-wave)	480
			Power frequency withstand voltage	200
		H.V. neutral point (kV)	Peak value of Impulse test (Full-wave)	325
			Power frequency withstand voltage	140
		L.V. Side (kV)	Peak value of Impulse test (Full-wave)	105
			Power frequency withstand voltage	45
11	Loss	(kW)		35
		No-load loss		
		(kW)		155
		Load loss		
		Tolerance permitted		±15%
12	(%) No-load current at rated voltage and rated frequency			0.6
13	(kg) Total weight			54,000
	(kg) Shipping (heaviest piece)			43,000
				(Fill oil when transport)

14	(mm)	
	Transformer overall dimension	5,600*4,400*5,500
	(mm) (Length*width*Height)	
	(mm)	
	Transformer shipping dimension	3,900*2,200*3,200
	(mm) (Length*width*Height)	

Accessory

1.- Measuring and protecting equipment

(1) Top oil temperature indicator: 1 set, type: BWY-803, made in China. The output temperature range shall be 0°C to 150°C. it will be equipped with an alarm contact and a trip contact.

(2) Equip 1 set hot spot winding temperature indicator, type: BWR-04, made in China. In addition to providing visible indication of the top oil temperature from 0° to 150°C, it will be equipped with an alarm contact and a trip contact.

(3) Pressure Relief Device, type: YSF, made in China.

(4) Buchholz relay, type: QJ, made in China.

(5) Oil level indicator, UZF, made in China.

The power supply of all the accessories above will be 125V DC

2.- Current transformer

Equip CT (current transformer) on the transformer. The quantity, type and location are as follows:

Type		Current ratio	Load	accuracy class	Quantity
H.V. side	LR	100-300: 5A	30	0.5	3
	LRB	100-300: 5A	30	10P20	6
H.V. neutral point	LRB	100-300: 5A	30	10P20	1

3.- Auxiliary power and control circuits

Equip a cable box. All the measuring and protecting junction are lead in the cable box. The cable box provides space heater and illumination light equipment.

4.- Cooling equipment and controls

The cooling equipment will be detachable radiators and cooling fans. The transformer equip fan cooler control box. The cooling fans is controlled by oil temperature or load, be on and off at the same time. Power supply of cooling fans will be 480V AC 60Hz, and control power of cooling fans will be 125V DC.

5.- The oil preservation system will be the constant pressure conservator with air-cell.

6.- Bushing

(1) H.V. side: bushing locates at the top tank, outlet to overhead wire. Type: BRW, Oil-impregnated paper condenser bushing, made in China.

(2) L.V. side: bushing locates at the Rear tank, outlet to copper bar. Type: BFW, oil filled bushing insulator, made in China.

Equip oil filter valve at upper tank part, oil drain valve at lower tank part, sewer valve at lower tank part, oil sampling valve and other valves.

7.- Equip off load tap changer made in China, type: WDT □ 400/110-6×5.

8.- Insulation oil

Transformer oil type: DB-25, naphthene base crude oil, made in China. Chemically stable, free from acidity or other corrosive ingredients. Breakdown Voltage (Distance 2.5mm) ≥ 45kV. Water content ≤ 15ppm, Solidifying point ≤ -25 □

Test

Do the factory tests as follows before transformer leave factory:

1.- Measurement of winding resistance

2 .- Measurement of voltage ratio and check of connection symbol

3.- Measurement of short-circuit impedance and load loss (Reference temperature: 75°C)

4.- Measurement of no-load loss and no-load current

5.- [Measurement of earth](#) insulation resistance of Windings and [dielectric loss factor of insulating system](#)

6.- Insulating routine test

Full-wave impulse test

Induction withstand voltage test

Measured partial discharge ≤ 500PC at induction withstand voltage test

7.- Insulation oil test

Other

1.- This technical agreement is an accessory of sales confirmation, and is valid on the date when stamped and signed.

SF-36000/115±2×2.5%:13.8

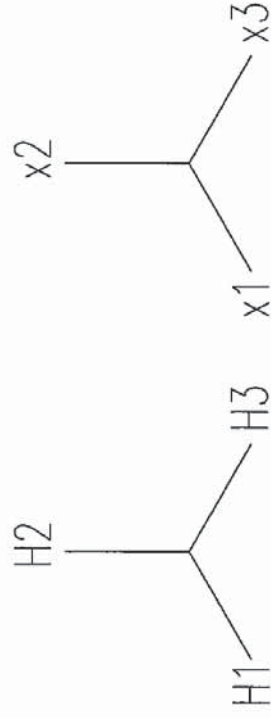
115kV (Y)

13.8kV (Y)

Stabilizing winding (Δ)

Vector group

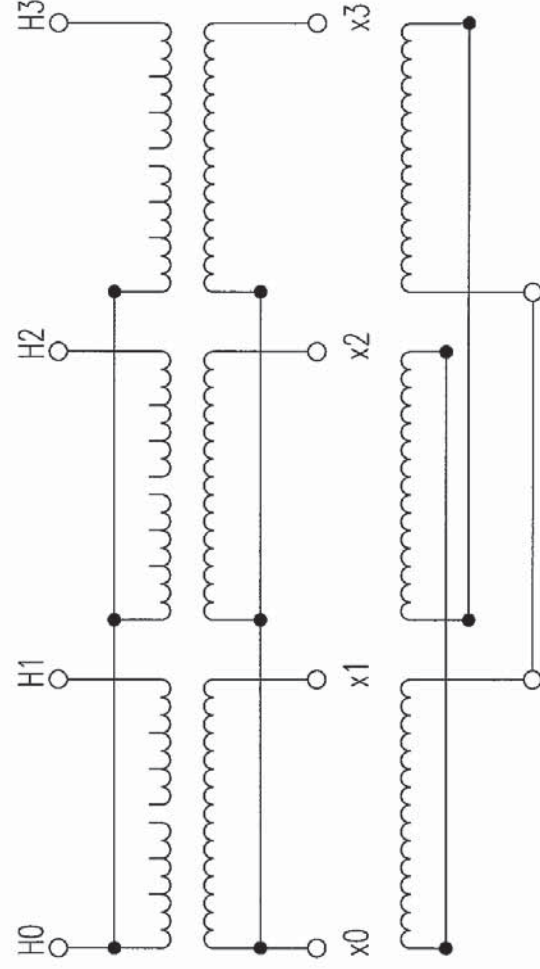
115kV



Stabilizing winding

13.8kV

Connection diagram



No.	Code	Name	Qty.	Material	Remark
Mark No.	Amendment No.	Signature	Date		
Draw		Process			
Design		Approval			
Check		Standard			
Inspection		Date			
Total pages				Page No.	
Drawing mark				Weight	Qty. Scale