

EWT Earthing Transformers

Source:

http://www.ewt.com.my/index.php?option=com_content&view=article&id=66&Itemid=91



In areas where earth point is not available, a neutral point is created using an earthing transformer. Earthing transformer, having the zig-zag (interstar) winding is used to achieve the required zero phase impedance stage which provides the possibility of neutral earthing condition. In addition an auxiliary windings can also be provided to meet the requirement of an auxiliary power supply.

Earthing transformers are usually oil immersed and may be installed outdoor. As for connection, the earthing can be connected directly, through an arc-suppression reactor or through a neutral earthing reactor or resistor. In cases where a separate reactor is connected between the transformer neutral and earth, the reactor and the transformer can be incorporated into the same tank.

Our earthing Transformer's system ranges from 11kV to 33kV. Standard accessories and fittings are as follows:

- Conservator
- Silica Gel Breather
- Bucholz Relay
- Oil Temperature Indicator
- Uninhibited Oil
- LV (415kV) Switchfuse
- Pressure Relief Device
- Drain Valve
- Gate Valve

TECHNICAL DATA - 300kVA 11/.415kV

ITEM	DESCRIPTION		11000/415V
1	Continuous maximum rating	kVA	300
2	Model		ETR 11
3	Vector Group		ZNyn1
4	Number of Phase		3
5	Number of Winding		2
6	Normal Ratio of transformation on No-Load (HV/LV)	kV	11/0.415
7	Zero Sequence Impedance 75°C	Ohm/Phase	11.30
8	Frequency / Type of Colling	Hz	50/ONAN
9	Maximum Top Oil Temperature at : -		
	a) CMR of the secondary winding and 30°C ambient	°C	85
	b) Maximum specified earth fault current of the primary winding 30°C	°C	85
10	Winding hot spot temperature at CMR of the secondary winding 30°C	°C	108
11	Maximum average winding temperature at CMR and 30°C ambient	°C	90
12	Peak asymmetrical mechanical withstand on the interconnected star winding	kA	1.36
13	Maximum flux density in iron at normal voltage, frequency and ratio (no-load) Cores / Yokes	Tesla	1.6
14	Earth Fault current rating of interconnected Start windings @10 seconds	Amps	1600
15	No Load Loss	kW	0.7
16	Load Loss	kW	3
17	Impedance voltage at 75°C and CMR of Secondary windings between HV & LV windings.	%	9.8
18	Resistance of HV windings at 75°C	Ohm/Phase	1.8
19	Insulation Level		
	Primary (Interconnected Start) winding :-		
	a) Full Wave Impulse Withstand / (BIL)	kV	95
	b) Induced Over Voltage	kV	22
	c) Separate Source Power Frequency Withstand of Neutral	kV	28
	Secondary Winding :-		
	a) Induced Over Voltage	kV	0.83

	b) Separate Source Power Frequency Withstand of Neutral	kV	3
20	Type of Winding Material and Construction		
	a) HV		Copper / Wire
	b) LV		Copper / Sheet
21	Type of Transformer Oil / Weight of Oil (Ltr.)		Mineral Oil / 764
22	Type and Rated Current of LV Bushing		DIN / 630A
23	Type and Rated Current of HV Bushing		DIN / 250A
24	Transformer Weight :-		
	a) Untanking Mass	kg	1760
	b) Total Weight of Completed Transformer (including oil)	kg	3560

TECHNICAL DATA - 300kVA 33/.415kV

ITEM	DESCRIPTION		33000/415V
1	Continuous maximum rating	kVA	300
2	Model		ETR 33
3	Vector Group		ZNyn11
4	Number of Phase		3
5	Number of Winding		2
6	Normal Ratio of transformation on No-Load (HV/LV)	kV	33/0.415
7	Zero Sequence Impedance 75°C	Ohm/Phase	35.72
8	Frequency / Type of Colling	Hz	50/ONAN
9	Maximum Top Oil Temperature at : -		
	a) CMR of the secondary winding and 30°C ambient	°C	85
	b) Maximum specified earth fault current of the primary winding 30°C	°C	85
10	Winding hot spot temperature at CMR of the secondary winding 30°C	°C	108
11	Maximum average winding temperature at CMR and 30°C ambient	°C	90
12	Peak asymmetrical mechanical withstand on the interconnected star winding	kA	1.36
13	Maximum flux density in iron at normal voltage, frequency and ratio (no-load) Cores / Yokes	Tesla	1.68
14	Earth Fault current rating of interconnected Start windings @10	Amps	1600

	seconds		
15	No Load Loss	kW	1.7
16	Load Loss	kW	1.95
17	Impedance voltage at 75°C and CMR of secondary windings between HV & LV windings.	%	4.2
18	Resistance of HV windings at 75°C	Ohm/Phase	3.5
19	Insulation Level		
	Primary (Interconnected Start) winding :-		
	a) Full Wave Impulse Withstand / (BIL)	kV	200
	b) Induced Over Voltage	kV	66
	c) Separate Source Power Frequency Withstand of Neutral	kV	70
	Secondary Winding :-		
	a) Induced Over Voltage	kV	0.83
	b) Separate Source Power Frequency Withstand of Neutral	kV	3
20	Type of Winding Material and Construction		
	a) HV		Copper / Wire
	b) LV		Copper / Sheet
21	Type of Transformer Oil / Weight of Oil (Ltr.)		Mineral Oil / 1270
22	Type and Rated Current of LV Bushing		DIN / 630A
23	Type and Rated Current of HV Bushing		DIN / 250A
24	Transformer Weight :-		
	a) Untanking Mass	kg	3425
	b) Total Weight of Completed Transformer (including oil)	kg	5580
25	Transformer Dimension : L X W X H (mm)		2535 x 2265 x 2095