GREEN TRAFO PRODUCTS

TIM - TPH - CNT

GROUNDING TRANSFORMERS WITH PETERSEN COILS

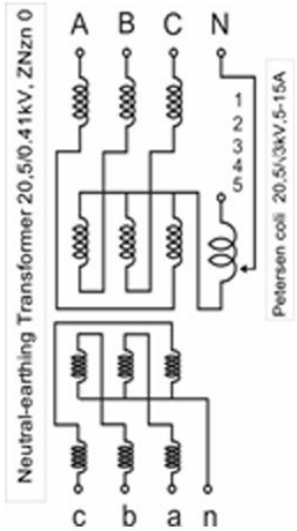
Grounding transformer with Petersen coil is a transformer with ZNzn0 (or ZNyn11+d) connection and variable impedance. The high-voltage side of the transformer is characterized by low zero-sequence impedance (less than 30 ohm). On the low-voltage side (410V) the zn or yn+d connection allows exploitation of three-phase and one-phase voltage. Compensative current is adjustable in 5 steps. The allowed time of a one-phase fault is up to 120 minutes.

All technical characteristics can be adjusted to the particular customer's needs.

Remark: In comparison to the TIM-TPH Series, the CNT Series involve the maximal duration of the fault which is 5 minutes (instead of 120 minutes of TIM-TPH) and ZNyn11+d connection (instead of ZNzn0).

General technical characteristics of TIM-TPH-CNT series:

- → Rated Power (kVAr): **50, 100, 200, 315, 500**
- → Rated Low Voltage (kV): **0,410; 0,420**
- → Connection: **ZNzn0 (or ZNyn11 +d)**
- → R/X (%): **< 2.5**
- → Fault duration (min): **120 (or 5)**
- → Temperature class: **A**
- → Standard: **IEC 60076-6**
- → Rated High Voltage (kV): **10; 11; 20,5; 22; 33**
- → Highest voltage level of equipment (kV): **12; 24; 36**
- → Compensative fault Current (A): **5 … 15**
- → Total variation Zo (%): **<2**
- → Cooling: **ONAN**
- → Frequency (Hz): **50**
- → SNRO: **57090 00**



TECHNICAL DATA – TIM 100, TPH 200, TPH 315, TPH 500

Manufacturer			**GREEN TRAFO, Belgrade**			
Transformer type			**oil-immersed**			
Transformer kind			**hermetically sealed**			
Standard			**IEC EN 60076**			
Types			**TIM 100**	**TPH 200**	**TPH 315**	**TPH 500**
1	Rated power	[kVA]	**100**	**200**	**315**	**500**
2	Number of phases		**3**			
3	Rated frequency	[Hz]	**50**			
4	Highest voltage level of	[kV]	**24**			
5	Rated insulating level	[kV]	**LI 125 AC 50/AC1010**			
Grounding transformer						
6	Rated primary voltage	[kV]	**20.5**			
7	Rated secondary	[kV]	**0.410**			
8	Connection symbol		**ZNzn0**			
10	Rated impedance	[%]	**4**			
11	Regulation	[%]	**±2x2,5**			
12	Noise level	[dB(A)]	**≤ 59**			
13	No-load losses	[W]	**210**	**400**	**520**	**720**
14	Load loses at 75 ℃	[W]	**1750**	**3000**	**5000**	**6500**
Petersen coil						
15	Rated power	[kVAr]	**59**	**89**	**118**	**148**	**178**
16	Highest voltage level	[kV]	**24**			
17	The max. duration of	[min]	**120**			
18	Rated voltage	[kV]	**20,5**			
19	Voltage drop	[kV]	**20,5/√3**			
20	Connection symbol		**YN**			

21	Taps		**1**	**2**	**3**	**4**	**5**
22	Currents for taps (Fault	[A]	**5**	**7,5**	**10**	**12,5**	**15**
23	Impedance for taps	[Ω]	**2367**	**1578**	**1183**	**947**	**789**
Grounding Transformers with Petersen Coils							
24	R/X at 75 °C	[%]	**≤ 2.5**				
25	Zo linearity up to	[%]	**≤ 2**				
26	Zero sequence impedance for taps	[Ω]	**7100**	**4734**	**3550**	**2840**	**2367**
Temperature rises, conditions of use and installation							
27	Maximal ambient	[C]	**40**				
28	Maximal temp. rise of	[K]	**65** and IEC 60076-5:2006.				
29	Maximal temperature	[K]	**60** and IEC 60076-5:2006.				
30	Thermal class of		**A**				
31	Type of cooling		**ONAN**				
32	Installation height	[m]	**≤ 1000**				
33	Type of terminal connection		**HV and LV : DIN Bushing** **Plug in type Euromold - 1 pcs. (N)**				
34	Place of installation		**Outdoor/indoor**				
Maximal dimensions and masses							
35	Maximal dim. of the transformer: a) length b) wide c) height	 [mm] [mm] [mm]	 **942** **925** **1381**	 **990** **990** **1420**	 **1150** **1080** **1560**	 **1280** **1080** **1730**	
36	Approx. mass of oil	[kg]	**350**	**450**	**530**	**650**	
37	Approx. mass of the	[kg]	**1310**	**1750**	**2020**	**2600**	