



## GREEN TRAF0 PRODUCTS

# SUBc – GROUNDING REACTOR WITH PETERSEN COIL

Subcomp (SUBc) is a grounding reactor with winding in Z-connection and with variable impedance Petersen coil, both of which are placed in the same tank. In normal operation, Subcomp is characterized by a very small magnetizing current. During a one-phase fault, the fault current is limited by the Petersen coil which is connected to the star-point of the reactor's Z-connection winding. The duration of the fault is usually limited to 300 seconds. Some of the notable technical characteristics of Subcomp are  $R/X < 2,5\%$  and Linearity (diff)  $<1,5\%$ .



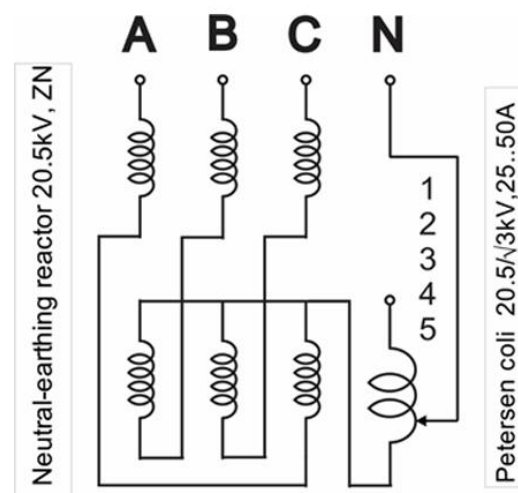
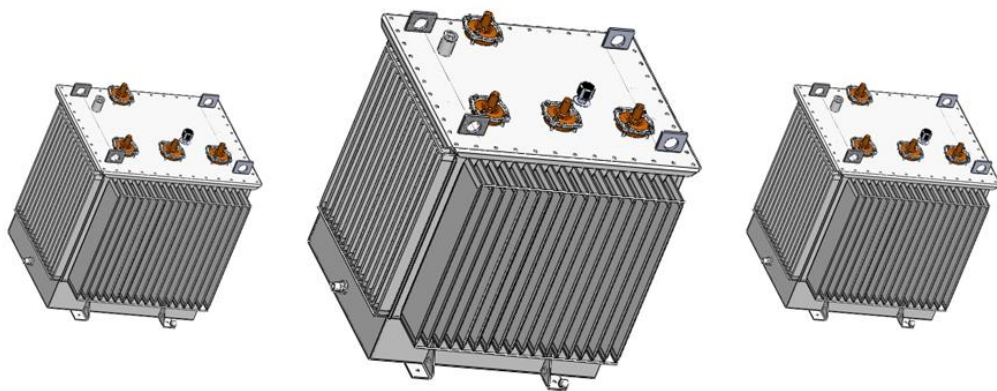
All technical characteristics listed below can be adjusted to the particular customer's needs.

**Technical characteristics of SUBc-20,5kV; 25A-50A:**

- Rated Voltage (kV): **20,5**
- Connection: **ZN**
- No-load losses (W): **320**
- R/X (%): **< 2.5**
- Fault duration (min): **5**
- Temperature class: **A**
- Standard: **IEC 60076-6**
- Terminations:
  - a) Open type bushings (**standard solution**)
  - b) Plug-in type bushings (**optional solution**)
- Highest voltage level of equipment (kV): **24**
- Reactive Current per phase (A): **25 ... 50**
- Impedance [ $\Omega$ ]: **474 ... 237**
- X linearity (%): **<1.5**
- Cooling: **ONAN**
- Frequency (Hz): **50**
- SNRO: **57090 00**
- Accordance with: **EN 50180, EN 50386, EN 5038**

Special design: SUBc-20,5kV; 5A-15A:

Special design involves smaller horizontal dimensions which are achieved by increasing the height, and as such the special dimensions make the reactor suitable for installation at the available space in the substation. The compensative fault current range was designed to 5A-15A.



Manufacturer		GREEN TRAF0, Belgrade		GREEN TRAF0, Belgrade	
Transformer type		oil-immersed		oil-immersed	
Transformer kind		hermetically sealed with air cushion		hermetically sealed	
		with Petersen coil 20.5kV,25-50A, 5min		with Petersen coil 20,5kV, 5-15A, 5min	
Standard		IEC 60076			
<b>Grounding transformer</b>					
2.	Number of phases			<b>3</b>	
3.	Rated frequency	[Hz]		<b>50</b>	
4.	Highest voltage level of the equipment	[kV]		<b>24</b>	
5.	Rated insulating level	[kV]		<b>LI 125 AC 50</b>	
6.	Rated voltage	[kV]		<b>20.5</b>	
10.	Connection symbol			<b>ZN</b>	

11.	No-load losses	[W]	<b>320</b>	<b>240</b>
<b>Petersen coil</b>				
2.	Voltage drop	[kV]	<b>20.5/SQRT(3)</b>	<b>20,5/√3</b>
3.	Current	[A]	<b>25-50A in 10 steps 2.5A</b>	<b>5, 7.5, 10, 12.5, 15</b>
4.	Impedance	[Ω]	<b>474-237</b>	<b>2367, 1578, 1184, 947, 789</b>
5.	Duration	[min]	<b>5</b>	<b>5</b>
<b>Temperature rises, conditions of use and installation</b>				
	R/X at 75 °C	[%]	<b>≤ 2.5</b>	
	Zo linearity up to 1.1*Un/sqrt(3)	[%]	<b>≤ 2</b>	
	Maximal ambient temperature	[C]	<b>40</b>	
16.	Maximal temperature rise of conductor	[K]	<b>65</b>	
17.	Maximal temperature rise of oil	[K]	<b>60</b>	
18.	Thermal class of insulation		<b>A</b>	
19.	Type of cooling		<b>A</b>	
20.	Installation height (above sea level)	[m]	<b>ONAN</b>	
21.	Type of terminal connection		<b>HV : Plug in type Euromold - 4 pcs</b>	<b>HV : DIN Bushing – 3 pcs. (A, B, C) Plug in type Euromold - 1 pcs. (N)</b>
22.	Place of installation		<b>Outdoor/indoor</b>	
<b>Maximal dimensions and masses</b>				
23.	Maximal dimensions of the transformer:			
	a) length	[mm]	<b>1050</b>	<b>860</b>
	b) wide	[mm]	<b>850</b>	<b>550</b>
	c) height	[mm]	<b>1250</b>	<b>1690</b>
24.	Approximate mass of oil	[kg]	<b>400</b>	<b>200</b>
25.	Approximate mass of the transformer	[kg]	<b>1400</b>	<b>880</b>