Homopolar generators

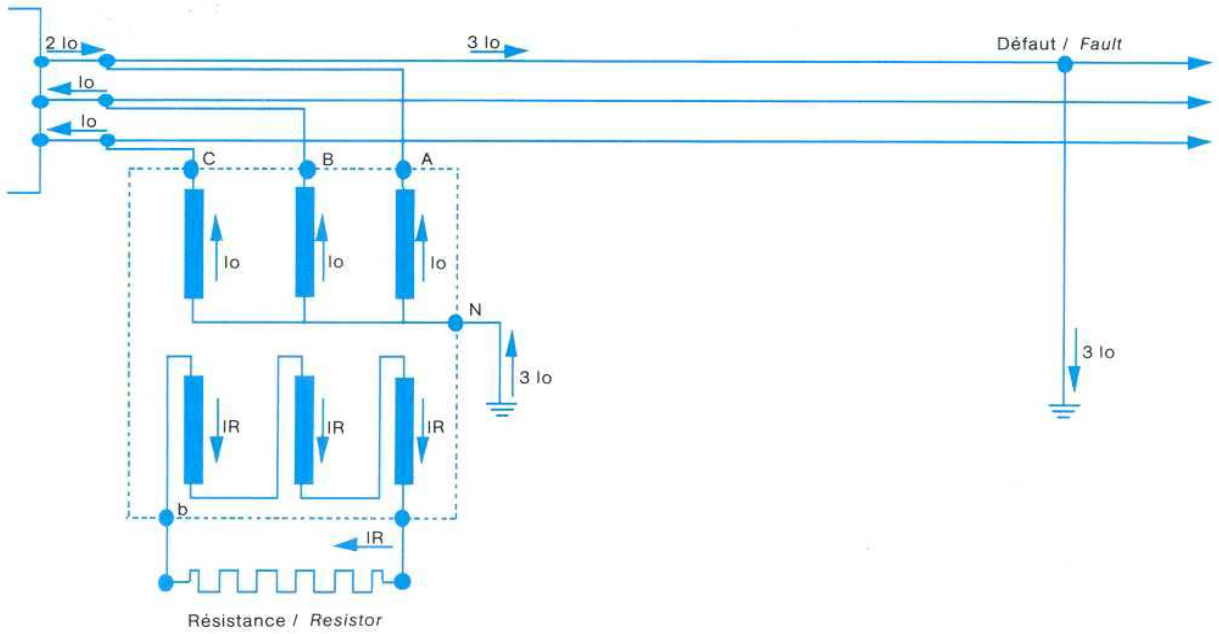
Reference list | Picture + Drawing

BACK

HOMOPOLAR GENERATORS WITH RESISTOR

THREE-PHASE SOURCE WITHOUT NEUTRAL

ELECTRIC NETWORK TO PROTECT



HOMOPOLAR GENERATORS WITH RESISTOR

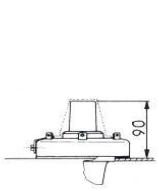
5,5 kV to 20kV 50Hz

To standard…	NF C 52 300 ICE 289

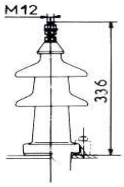
Voltage networks (50Hz)			
5,5 kV	10 kV	15 kV	20 kV

Insulation level	22 kV	28 kV	38 kV	50 kV
Shock level	60 kV	75 kV	95 kV	125 kV
Secondary voltage	410 V at no load on dead fault			

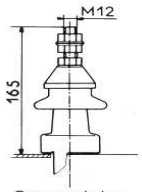
Production characteristics	Standard accessories	Additional accessories
Oil, silicone oil or Ugilec immersed transformer with total filling of tank. **Primary coupling:** Star with neutral **Secondary coupling:** open delta Copper winding. Corrugated oil tank. Natural air cooled stainless steel wire resister. With casing IP12 made in galvanized sheet metal unpainted.	4 Fixed spittable terminals 250A (HN 52 S 61) –fig.1. 2 porcelain terminals 250A (C52.052) – Fig.3. 2 earthing terminals. Lifting lugs Filling and drain plugs. Name and rating plate.	4 porcelain terminals – Fig.2. LV cover (H=230) Safety device DGPT2. Locking device for spittable terminals (lock not included).



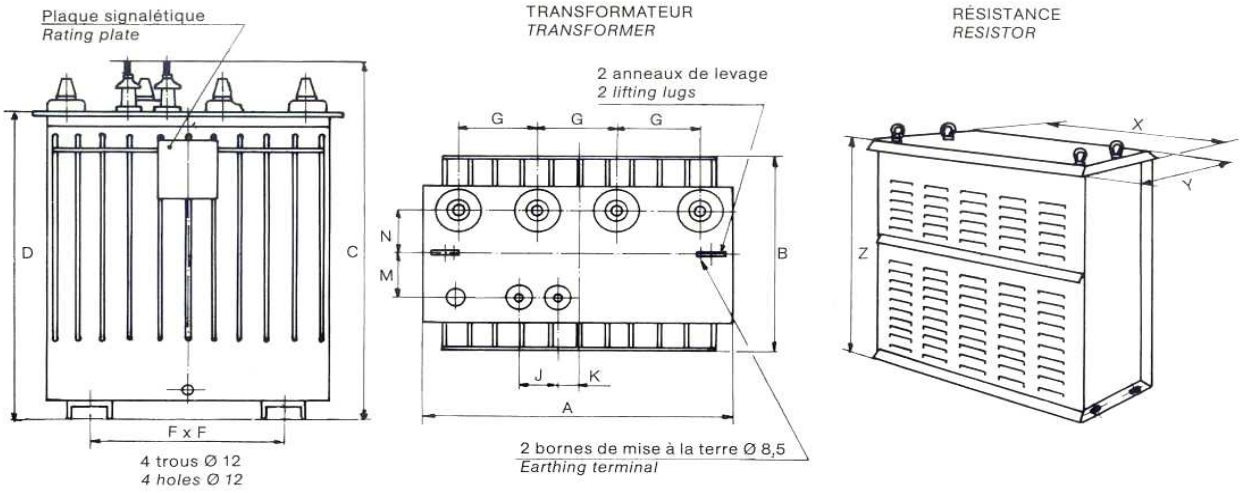
Primaire
Primary
Fig. 1



Primaire
Primary
Fig. 2



Secondaire
Secondary
Fig. 3



GENERAL CHARACTERISTICS

Permanent fault current : 50A (3 io).

Straight fault current limited at : 20 A, 30 A or 50 A
during 5 seconds (3 io).

Primary voltage	A	B	C	D	F	G	J	K	M	N	X	Y	Z
5500 V	710	590	840	675	380	170	80	60	90	85	630	360	380
10000 V	805	630	910	745	380	200	80	60	100	92	630	370	520
15000V	815	650	1015	850	520	200	80	27	108	102	790	460	560
20000V	815	650	1015	850	520	200	80	27	108	102	790	460	560

(Sizes : millimeters)

	TRANSFORMER						RESISTANCE
Dielectric	**Oil**		**Oil Silicone**		**Ugilec T**		**Air**
Primary voltage	**dielec**	**total**	**dielec**	**total**	**dielec**	**total**	
5500 V	80	280	90	290	135	335	23
10000 V	90	350	100	360	150	410	31
15000 V	115	520	130	535	190	595	55
20000V	1156	520	130	535	190	595	55

(mass : kg)

For other voltages, or other currents, pls, consult with us.

Dry type transformer at the demand.

OPERATION

The earthing of a medium voltage network neutral or the protection of alternator masses can be carried out using a homopolar generator associated to a resistor connected on the low voltage end.

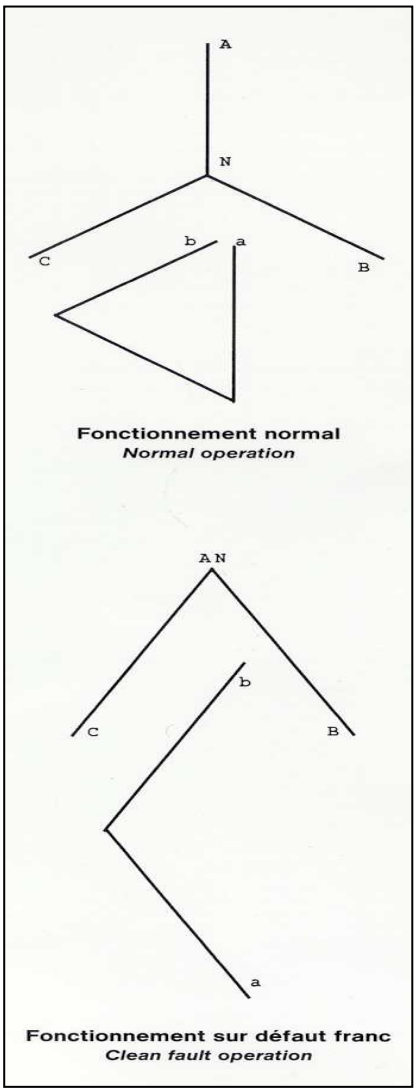
This generator is like a three phase transformer with two windings and free flux (generally). This transformer has a primary winding (medium voltage) which is star connected with its neutral connected to the earth. The secondary is delta connected on a resistor.

During normal operation, the voltage across the terminals of the secondary is zero and no current flows through the resistor.

When a fault arises on a phase, neutral point 's displacement on the primary makes appear an homopolar voltage on the terminals of the secondary (see diagrams) : the current flows through the resistor.

The value chosen for this resistor, and characteristics of the transformer (inductive & resistive drops), determines the clean fault current at the medium voltage.

In the event of a less severe fault, the neutral displacements is less and the fault current the low and medium voltage end proportional to the neutral displacement.



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