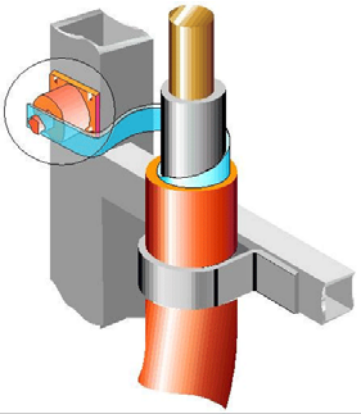
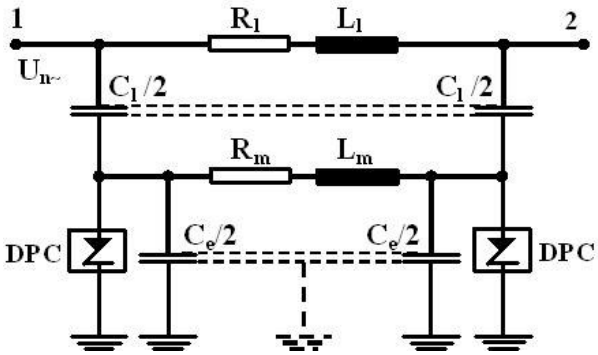
Electric decoupling and electroprotection device for medium and high voltage underground power cables - DPC

DESCRIPTION OF PRODUCT:
Method and DPC solid-state device are designated for faults prevention of underground power cables and increase of life-time and maintenance of power cables. Using of silicon solid-state device on underground power cables assures the corrosion control of metallic screen sheets by intrinsic cathodic protection of the metallic shields without external power supply (power rectifier).
Patent RO 113502 / 1998.

DPC device



Schematic diagram



Electric diagram of a monophase cable with active anticorrosive protection:
- Rl, Ll - resistance, respectively specific inductance of active conductor;
- Rm, Lm - resistance, respectively specific inductance of screen;
- Cl - specific capacity of active conductor / insulator / screen;
- Ce - specific capacity of screen / external PVC coat / soil;
- 1, 2 - power cables ends;

DPC - „solid-state" device of electroprotection and electric decoupling.

TECHNICAL CHARACTERISTICS:

Parameter	Type A	Type B
Forward voltage V_F [V] at I_F = 100 A	<0,85	<0,75
Reverse voltage V_Z [V] at I_Z = 1 A	35 5V	15 5V
Rated current in forward polarization I_F [A]	110	120
Rated current in reverse polarization I_Z [A]	3	6.5
Current integral in forward polarization [A^2s]	200 000	200 000
Current integral in reverse polarization [A^2s]	10 000	20 000
Peak current of a lightning impulse of 8/20 s [A]	100 000	100 000

ADVANTAGES:
By adequate implementation on underground power cables networks, it is assured:
• faults prevention, hence increase of their maintenance and reliability;
• improvement of the insulation resistance;
• low cost for both implementation and operation.

USERS:
Distributors of electrical energy.