

On-line transportable Transformer Conditioning and conserving System

Specification

1.0 Use of the system

The system shall be used for preventing and treating transformer ageing by removing water, particles and atmospheric gas (namely Oxygen, Nitrogen) from the oil, thus resulting in a quick restoration of safe dielectric conditions and assuring a reliable and secure service.

2.0 System – configuration

The system should have the following properties:

- Mobile.
- Suitable for all size and types of mineral oil filled transformers.
- It should be combination of moderate vacuum system (It is explicitly prohibited the use of absolute vacuum pumps) with low temperature process (normal transformer temperature) and without the need of changing regularly and frequently any consumables e.g. filters, cartridges etc.
- The device must be provisioned for preventing oil over-drying though volumetric control of the removed water (daily/total). Water measurements should be readable both on-site by visual inspecting the water collection vessel by remote.
- All oil-containing containers including pumps must be hermetically sealed for preventing any oil leakage.
- Special precautions must be taken so that no aromates are distilled during the oil treatment.
- The device must be designed for on-line and long-term connection to the transformer and without any service interruption during installation and operation.
- Inlet and outlet connectors to the transformer oil circuit must be equipped with spring loaded electrical valves (Solenoid valves are not acceptable) ensuring automatic closing in case of any device or power failure insulating the complete transformer oil circuit side from the device thus protecting the transformer from draining.
- Automatic restart after power failure.
- Leakage control for all oil containing compartments.
- Remote control with analogue Modem or GSM connection.
- Going always in secure mode in case of failure.
- Designed for at least 20 years utile life.
- Power supply voltage 380V.
- Power supply frequency 50Hz.

3.0 Technical data

Power supply voltage	380V (or on request)
Power supply frequency	50Hz (or on request)
<u>Power consumption:</u> Without oil heater With oil heater	900W maximum 5.500W maximum
<u>Oil throughput:</u> Outlet water content Outlet gas content	10m ³ per day maximum 10ppm nominal, 4ppm minimum 1% nominal, 0,3% minimum
Outlet filtering grade	0,1µm
<u>Weight:</u> Dry weight (without oil) Operating weight (oil filled)	300kg maximum 400kg minimum
Hydraulical connection	2 × flexible 1/2" hose
Communication:	GSM modem

4.0 Operational condition:

Maximum surroundings temperature: 50°C

Minimum temperature of the transformer: 40°C

5.0 Protections

The system must be equipped with protections in order to operate for prolonged time periods without the necessity of any local supervision.

The protections must detect:

- Oil losses, within very short time of detecting oil loss the transformer must hydraulically isolated from the system by closing the valves.
- Overpressure: All the components must secured against the overpressure.
- Operational failure: The system must be equipped with protection which in case of any operational failure, should automatically stop the operation.