Technical data:

Mains:	400/230V 50 Hz 8 kW 5 wires (others on request)
Oil flow rate:	10 m3/24h
Water content in exit:	max. 10ppm, typically 4 ppm
Gas content in exit:	max. 1% typically 0,3%
High grade filtering:	1µm
Weight:	370 kg empty,
Dimensions:	- L: 1700 - W: 670 - H: 1360
Connection oil:	- 1⁄2 '' Hydraulic hoses
Remote control:	Analogue modem

Typical water separation:

Separation /24h** ml/24h	water in oil* ppm	Break down voltage** kV/2,5mm/20º
0	<5	>70****
20	<10	>60
50	<20	>50
100	<30	30-40
120	<40	>30***
130	>40	<30***

Remarks:

* measured with physical probe, with neutralization
Nr above 0.1 the Karl Fischer titration is not applicable.

** only oil without particles or fibers.

*** with separation above 100ml/24h must be controlled,
if this use is acceptable (Please inform DTC).

**** avoids over drying

DIDEE GMBH

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Transformer conditioning system

TRANSCOND

DIDEE GMBH

Transformer conditioning system

TRANSCOND

1. Use:

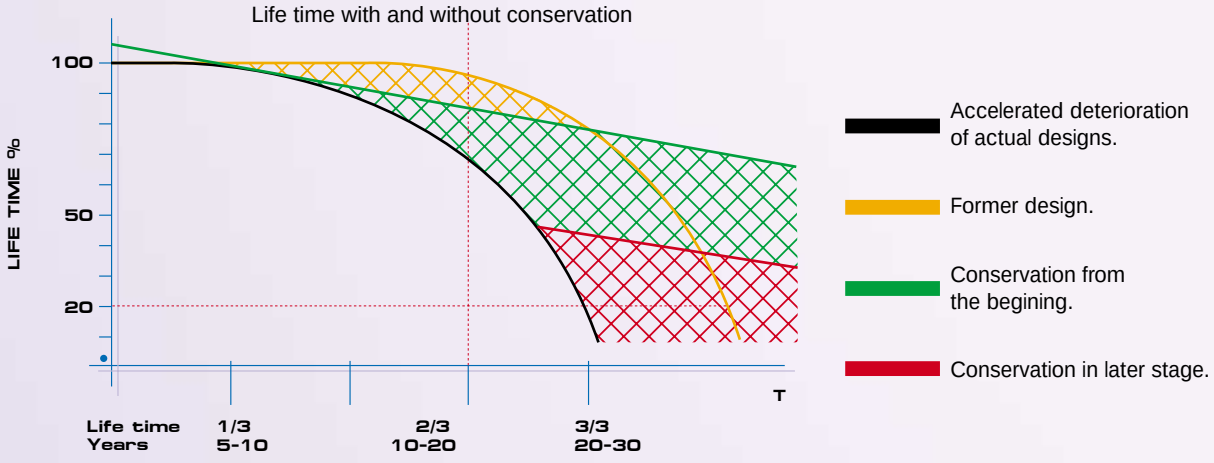
Transformer conditioning systems are needed to keep the actual substantial condition of a transformer in order to extent the life time and/or improve reliability and security of the service.

The system removes the ageing accelerators water and oxygen. Furthermore, it removes the particles using an integrated high grade filtering.

The necessary data of secure service, especially the Break Down Voltage (BDV) will be restored within a short time.

The long term reliability and electric strength will be restored or maintained because of the improved homogeneity in the insulation system and the low oxygen content, the latter measure stops nearly the ageing deterioration.

It is possible to keep even transformers with a remaining life time strength below 50%, which have normally a very limited utile life under 5 years, for 5-15 years longer in service, without jeopardizing the reliability of service and energy supply to the customer.



2. Specification:

Application:

Mineral oil filled transformers and similar machines like voltage/current transformers, reactors or all other systems with oil-cellulose insulation.

Technical features:

Maintaining the oil integrity: Moderate vacuum without vacuum pumps combined with a special process to separate oil and water (separation of emulsion). This process works without high temperatures. The complete system avoids therefore the loss of the aromatics (natural inhibitors) and deterioration of the oil by high temperature. The process assures that all oil fractions remain in the original oil.

Environment: Since no oil products will be extracted, the exhaust gases are free of any possible hazardous contamination. Therefore there are no limits even for indoor use.

The use of this system ensures both the extension of the transformer's service life and its sustainability, hence combining economic efficiency and protection of the environment.

Design: All oil containing vessels are hermetically sealed. There are no rotating joints i.e. pump shafts or similar.

Control of the process: The separated water is measured and it can be controlled physically in liters, as well as being used for further analysis. The internal average pressure is transmitted together with the amount of separated water and temperature of incoming oil, via modem for remote control. Therefore the whole process can be duly surveyed. The process allows getting the information about the actual condition of the transformer in means of gas saturation and water content. If a certain drying target (for example 2%) was set, after reaching the preset values the drying process will be stopped.

Remote control: All data necessary for the service can be read out by remote control, in case of need, parameters can be changed accordingly.

Security: The complete machine is designed for stand-alone use in unmanned substations. All failures of relevance to security (for example spills) will stop the machine and close the oil circuit directly at the transformer via electric spring loaded valves, which close also if the power should fail. The connection to the transformer is made by high pressure hydraulic hoses, which provides therefore an inherent security.

Start up/shut down: A PLC menu controlled start up procedure assures that all hoses, as well as the system are duly bleeded from air and gases. It is impossible, that air or gases are introduced into the transformer. Therefore the TransCond can be installed anytime under regular working conditions of the transformer.

Consumable: There are no consumables that have to be changed regularly. For reasons of security, it is recommended to change the high grade filters in the outlet at least after working 2 years.

Life expectancy: The design life based on a continued service is at least 15 years.

Communication: The standard communication is via analogue modem. Optionally GSM or LAN Ethernet connection can be provided.

Options: For extreme environment conditions it is possible to supply a hermetically sealed version with a separation system between outside and inside atmosphere by an air conditioning system.