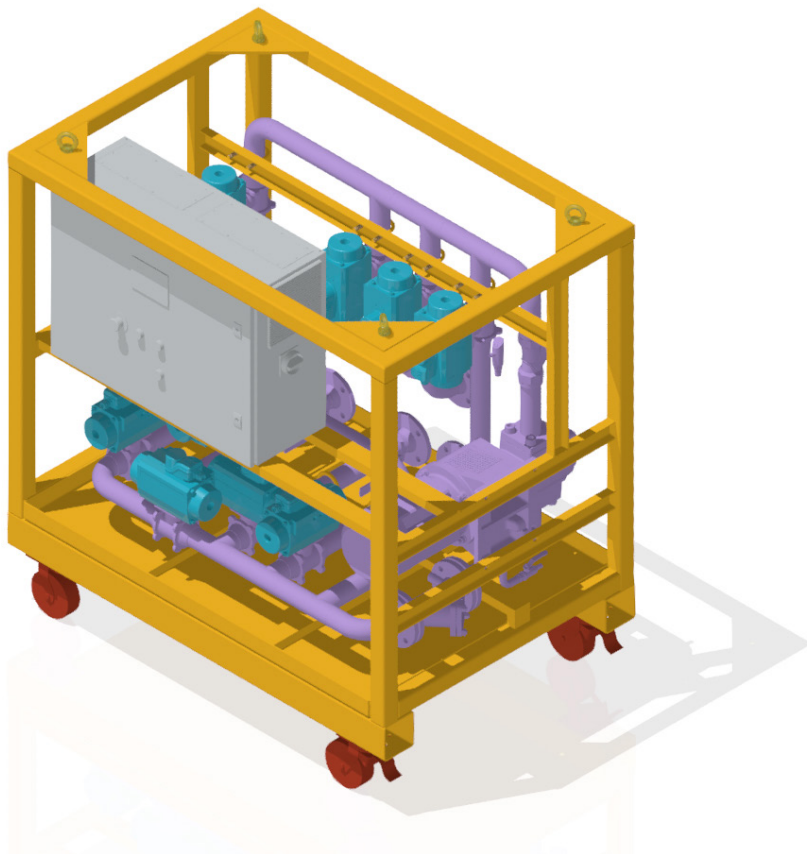


Oil Distribution Systems

Technical information type MXD

Catalogue 2024



Benefits and Applications:

Safe and easy handling
High standard components
Economical

APPLICATION OF ONLINE SUPERVISION TYPE MICA-TOS

GENERAL INFORMATION

The new Micafluid transformer online supervision (MICA-TOS) offered excellent service and safe handling for onsite conditioning on energized transformers.

The "TOS" system performs a continuous oil circulation on energized transformer. Easy handling and safe control guarantees most economical work in the field.

All components built in the system are first class European items with highest standard at lowest investment cost for highest performance and quality.

PREPARATION

Before start with an online treatment process on energized transformer all responsible and involved personnel must be informed. Local regulation must be followed.

For the connection of the MICA-TOS the transformer must be SWITCH-OFF during installation work.

The used oil treatment plant must be in proper condition and the leakage rate of the plant must be lower than 0.025mbar x lt / sec, to avoid any air impact into transformer tank.

INSTALLATION

1. Transformer must be switched-off.
2. Install oil level control device on transformer expansion tank and must be securely tightened with the safety chain. (Preventing any falling down during operation)
3. Next step will be the installation of Online Module (MICA-TOS) with the oil hoses according drawing HLAM 200940B on to transformer oil inlet and outlet connection.
4. Last step will be the connection between Online Module and Oil Treatment Plant.

Note:

The oil hoses must be electro static proofed.

5. Plug all the electrical control cables onto control panel.
6. Open all the automatic valves and start evacuation of the entire system. Main valve to transformer must be closed.
7. After approx. 15minutes stop vacuum pump(s) on oil treatment system and check if the vacuum stays for at least 30 minutes. For the vacuum test use Pirani vacuum probe.

If there is a drop in vacuum check leakage!!!

8. If the vacuum test passed the outlet valve of transformer tank can be slowly open.

According the pre selected valve position on the MICA-TOS module the following processes can be performed:

- Oil filling transformer over the oil treatment plant (OTP) from the bottom, supplied from a storage tank (ST)
- Drainage oil from transformer over the OTP into ST
- Preparation of the OTP for oil heating up (bypass transformer)
- Circulation over the transformer (from bottom to top)
- Online supervision of the transformer
- Re-cooling of the OTP (internal circulation in case of an alarm)

Note:

The recirculation oil inlet from expansion tank and oil outlet to transformer bottom is not directly possible with the MICA-TOS. This function must be ordered separately.

WORKING PRINCIPALS

The oil flows into the online module MICA-TOS, by pre-selecting the relevant valves and enters into the OTP.

By starting the oil feeding pump of OTP, the oil flow ether to transformer or into ST.

If no alarm is indicated on the OTP after oil circulation, the online supervision process can be starten. Finally the transformer can be switched on.

Remark:

Micafluid is not liable for online process and resulting damage at energised transformer. Customer will be fully responsible for the process.

The MICA-TOS system is maidly designed for the old Micafil OTP type VH or VOT as well as for the new Micafluid VOP plants.

The process with the MICA-TOS on third parties plants are basically possible, but needs technical reconfirmation with Micafluid. Micafluid is not liable for demadges on third parties OTP as well as consiquentional demadges.



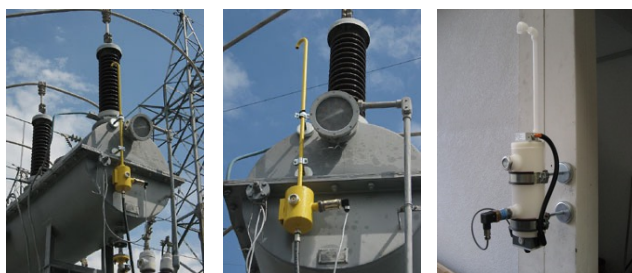
EQUIPMENTS FOR ONLINE OPERATION ON ENERGISED TRANSFORMERS

OIL LEVEL CONTROL DEVICE

In case of oil leak on transformer or on the oil hoses during the treatment process, oil level alarm close automatically the outlet valves on transformer and open the bypass control valve.

The oil level control device is equipped with an oil hose and stop valve. The oil hose will be connected on a service valves on the transformer bottom. (e.g. sample valve)

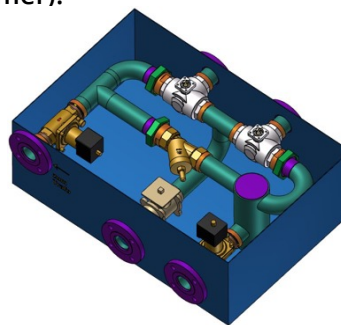
The fixing of the oil level control device is performed with two magnetic holders for proper and easy installation. With the magnet to device will be fixed and secured on the expansion tank of transformer or on a metal beam nearby the trafo.



ONLINE MODUL (MICA-TOS)

The online modul has five (5) flange connections.

Two (2) are forseen to connect onto transformer (Inlet/Outlet). The connection from /to transformer will be done with oil hoses as closed as possible. (Distance from MICA-TOS to transformer).



This two flanges are connected each with a solenoid valve and one air trap. The air trap avoid any air impact to transformer site.

The third flange is provided for the connection between the Modul and the Storage tank. In this case oil drainage and refilling of transformer oil in to storage tank will be possible.

The last two (2) flanges are for connection to oil treatment plant.

ALARM CONDITIONS

In case of any failure during the online process the MICA-TOS automatically separate transformer from oil treatment plant. The oil treatment plant will work over the bypass

system as normal. Outlet valve on transformer is close.

An alarm light/horn or SMS information (Optional) will indicate alarm situation.

In combination with option SMS control unit a signal will inform operating personnel about the alarm situation during online operation.

Micafluid supply the control panel.

Note:

Proper cover system to protect the online treatment plant against bad weather conditions during operation is required. (e.g. tarpaulin, metal cover or container)

If the used oil treatment plant does not have oil leakage supervision on the oil tub optional control system can be ordered.

PROCESS DESCRIPTION OF MICA-TOS

ONLINE APPLICATION WITH OIL TREATMENT PLANT

The oil flows from the transformer outlet in the online module into oil processing plant and back to Transformer.

3-way-valve 305: Oil flows directly into oil treatment plant.

3-way-valve 315: Öl flows back into expansion tank.

Remark: Oil valve item 309 to tank must be closed.

In case of alarm condition:

Both solenoid valves (301 and 321) closed and the oil flows over the non return valve (317) in to circulation. The oil treatment process move normally like internal circulation to avoid any overheating till the alarm will be resetet.

DRAINAGE OIL FROM TRANSFORMER INTO STORAGE TANK

The oil flows from transformer drain valve (bottom) into the Online Module throught the oil treatment plant into storage tank.

3-way-valve 305: Oil flows directly into oil treatment plant.

3-way-valve 315: Oil flows back to storage tank.

Remark: Oil valve item 309 to tank must be open.

OIL FILLING FROM STORAGE TANK INTO TRANSFORMER DRAIN VALVE (BOTTOM)

The oil flows from storage tank over the online module via pressure difference (sction by vacuum) over the oil treatment plant back to transformer. Oil filling to transformer over the bottom valve. The maximum oil level in transformer must be checked visuabelly.

3-way-valve 305: Oil flowas from storage tank into oil treatment plant.

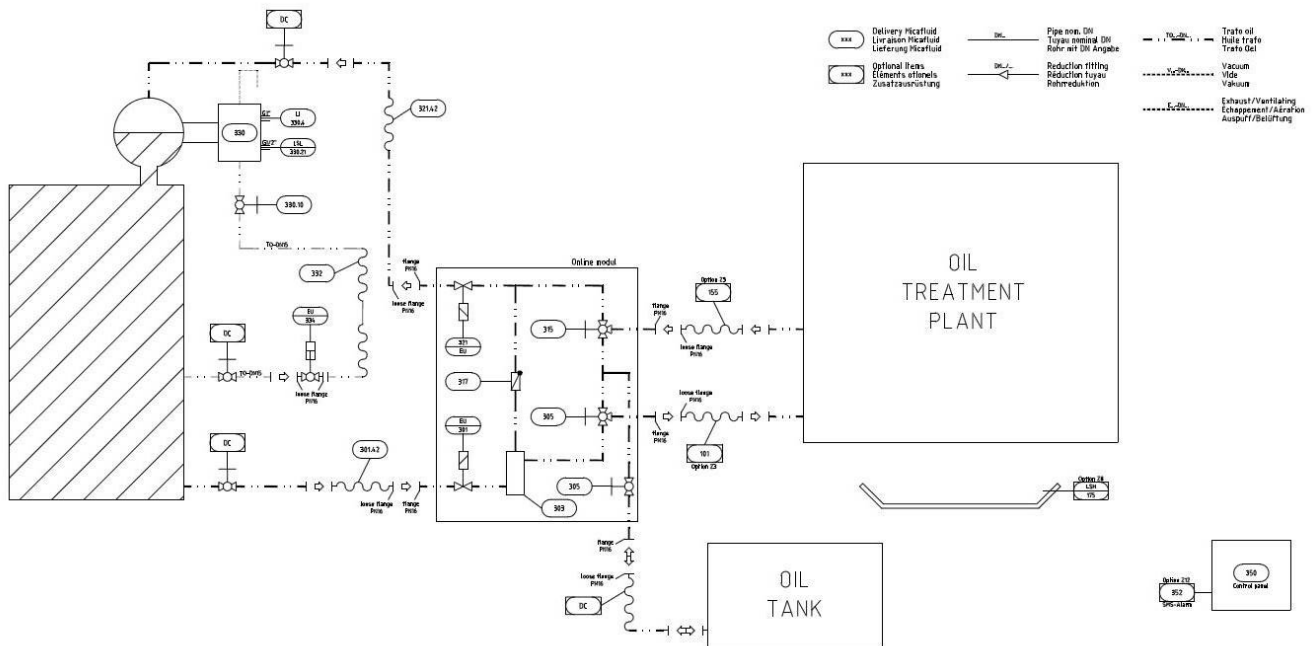
3-way-valve 315: Oil flows back to transformer.

Remark: Oil valve item 309 to tank must be open.

Solenoid valve item 301 open and solenoid valve item 321 closed.

During this filling process transformer housing mostly be under vacuum and the storage tank is under atmosphere.

COMPONENT DESCRIPTION



 **Driven by Swiss Technology since 1913**

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