

FILOIL[®] Transformer

Oil regeneration plant



About us

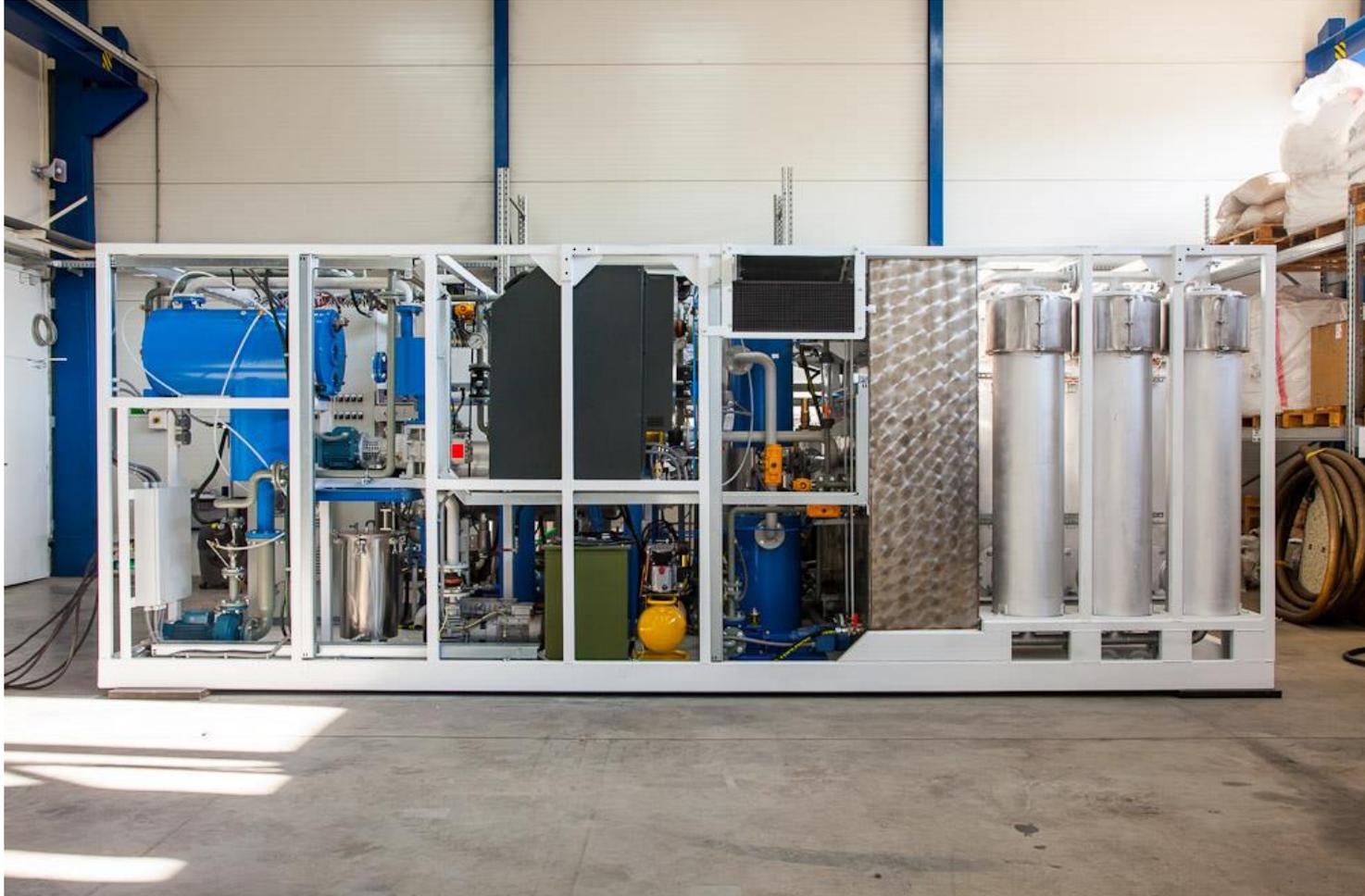
- Ekofluid is a manufacturing and servicing company
- Headquarters based in Vienna (Austria)
- Established in 1996
- Certified ISO 9001 , ISO 14 001 , SCC



Product range REOIL

- Transformer oil regeneration equipment
- Sorbent reactivation capability
- Variable number of columns
- Mobile solution
- Regenerates old transformer oil into like new state
- Fully automatic operation

Product range REOIL



Product range FILOIL

- Transformer oil treatment equipment
- High vacuum technology
- Double stage vacuum pumps
- Variable oil flow
- Fully automatic operation
- Compact design
- Mobile solution

Product range FILOIL



Description of oil treatment process

- Transformer oils are highly refined oils
- Over time aggregated moisture, gasses and solid particles can seriously affect oil properties
- To remove moisture, gasses, and solid particles oil treatment equipment needs to be used
- Oil is treated in steps

Description of oil treatment process

- At inlet oil is filtered through a coarse filter
- Oil is then heated to elevate the treatment effect
- Oil passes through vacuum breaking valve
- In the vacuum chamber oil is dehydrated and degassed
- Oil is passed through a 0.5 micron filter
- Degassed, dehydrated and filtered oil is then returned to the transformer

Description of oil treatment process



Technical characteristics

- Inlet pump is a positive displacement pump
- Outlet pump is centrifugal closed coupled high suction pump
- For degassing rotary vane , a vacuum pump and vacuum booster are used
- All valves are manually operated ball valves

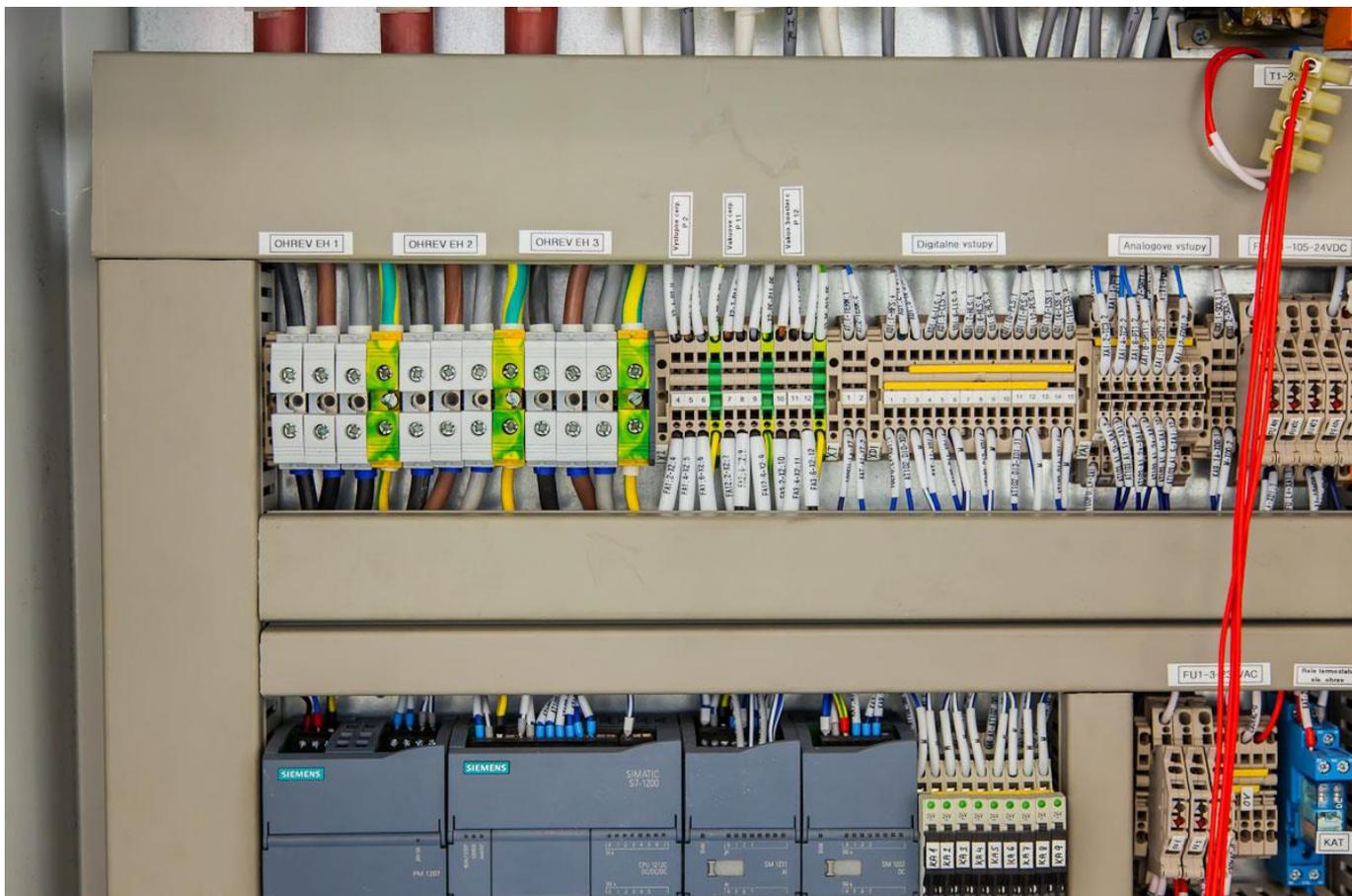
Technical characteristics



Technical characteristics

- Equipment is fully automatic controlled by PLC (Siemens)
- Operation via touchscreen SCADA (Siemens) software
- Possibility of manual operation
- Equipment has remote access trough GSM (3G)

Technical characteristics



Technical characteristics

- SSR modulation for heating
- Automatic shutdown incase of emergency
- Aeration valves to prevent spillage
- Overheating protection is automatic and manual
- Pressure relive valves across the equipment
- Automatic level switches to protect equipment

Technical characteristics



Technical characteristics

- Equipment can be placed inside a standardized container or on customized trailer
- Equipment can work on live transformers
- Possibility to double the capacity of equipment with extension module
- Possibility to connect the equipment with online supervision system (to monitor level in transformer during operation)

Technical characteristics



Performance values of oil regeneration equipment

- Always delivers the result required by the IEC 60814 and IEC 60567 standard
- Particulate matter is lowered to less than 99% of particles over 1.0 microns.

Property	Starting value	One pass	Several passes
Humidity (ppm)	< 50 ppm	<= 5 ppm	<= 3 ppm
Gas removal (%)	>= 10%	0,2	0,1
Particulate matter (micron)	na	98% of over 0.5	98% of over 0.5
Dielectric breakdon (kV/2,5mm)	30	>=65	>=85

Oil regeneration module

- Possibility to connect to all FILOIL equipment
- Improves acidity , Interfacial tension and tan delta
- Oil regenerated with regeneration sorbent
- Module has sorbent reactivation capabilities
- Can be purchased as an add on later

Oil regeneration module



Operation of equipment

- Minimal labor work required
- Operator controls entire system from touchscreen
- Two operators are recommend for setup
- Transformer needs to be offline for connecting and disconnecting but can remain in service during operation

Operation of equipment



Training and documentation

- Comprehensive training program
- Extensive documentation supplied with equipment
- Documentation available in printed and electronic form
- Complies with European 2006/42/EC Machinery Directive
- All training is done hands on with extensive documentation

Key customers

SIEMENS

ABB

RWE



a[⚡]po

e.on | Energie



مِرافِيق
MARAFIQ



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