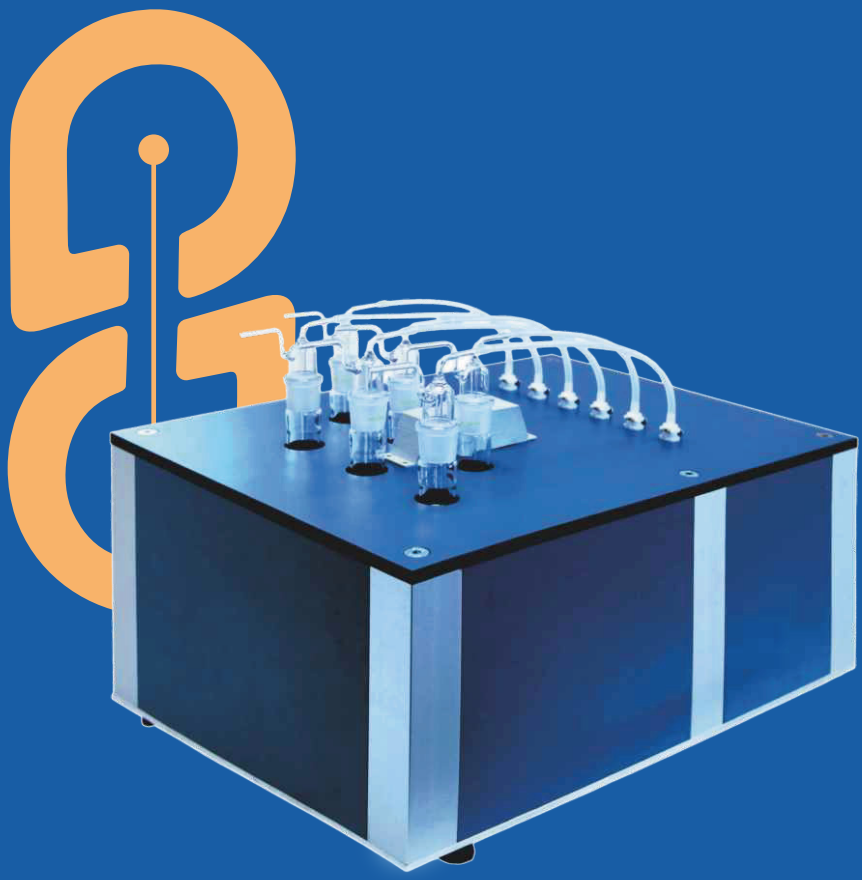
MEREL
instruments



- Modular design (6, 12, 18 or more positions)
- Low weight of single module (less than 36 kg)
- Data plotting, logging and report generating (temperature and individual flows)
- PC based user-friendly interface
- Quick heat-up time (less than 2 h)

Merel AOS-125
Apparatus for oxidation of insulating liquids

OXIDATION STABILITY PROCEDURE

Why is it important?

Because of its properties and price, mineral oil is the most commonly used oil in power transformers. Downside is that during operation, it is subjected to thermal and electrical stress in an oxidizing athmosphere, which causes deterioration of its insulating properties. With time, acidity increases and causes mud formation.
Oil aging analysis helps determine the 'age' of the oil more precisely, it means that we are able to predict when the oil needs to be changed. This results in more efficient use of oil throughout its full lifespan and prevents potential damage to transformer due to aged oil.

How can we make it simpler?

With this method it is important to sustain a consistent temperature and flow of oxygen during the entire test, otherwise the results may be inaccurate. Problem with these tests is that they are long lasting. For better control over the entire test period we have developed a ground breaking user interface with data logging and plotting of all parameters. We are not only able to see real time oxygen/air flows and temperatures but store and process them for future analysis as well.
We are aware of importance and seriousness of your work, which is why we are striving towards making your work as fluent and as simple as possible.

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We have designed an apparatus which suits your needs. A clean, minimalistic design with minimal number of components results in simplicity of use and looks the part too!

Apparatus

Apparatus has unique design in its class. With its outstanding user interface it will change the way you look at measuremet of **fluid aging.**
Single module consists of a rigid aluminum frame enclosed by matte finish polymer sides. It hosts a dry bath for oil ageing analysis with 6 glassware positions. Temperature and air flow is kept regulated with extreme stability and reliability. **We have used a dry bath method which keeps the procedure clean, doesn't produce toxic fumes and reduces cleaning time of glassware.** Apparatus has a separate sample holder, which can be easily detached for further analysis
Its modular design enables you to move it around with ease and allows you to stack together multiple modules if necessary. Single module can operate as an independent device or multiple modules can be connected together and operate as a single device for larger sample quantities. They can be monitored via only one user interface. **Our system offers a low-cost solution for analysis of samples and makes simple upgrading to a larger system possible.**

According to standards and more

Apparatus for oxidation of insulating liquids has been build according to IEC 61125 (old IEC 1125) standard and normative which ensures reliability of measurement. You can choose among method A (100°C) and method B (120°C) for aging evaluation. **Method A is related to unused uninhibited mineral insulating oils, while method B is related to unused inhibited mineral insulating oils, both methods use oxygen gas.**
For advanced users it is possible to create custom methods, where start time, duration, temperature of block and each individual flow through oil sample can be set. Each module is able to perform different methods (A, B or custom) simultaneously.

	Method A	*Method B*
Sludge formation	✓	✓
Soluble acidity, SA	✓	✓
Volatile acidity, VA		✓
Total acidity, TA or Neutralization Value		✓
Oxidation rate		✓
Dielectric dissipation factor, DDF or Tan Delta	✓	✓

Technical details

Electrical specification - module	
Required supply:	100 V - 240 V AC (+/-10 %)
Frequency:	50-60 Hz
Consumption [max]:	1100 W
Current:	4,5 A
Overvoltage category:	II
Heat-up time:	< 2 h
Dimensions	
Dimensions - module (WxHxD):	375 x 235 x 500 mm
Weight - module:	36 kg
Dimensions – rack (WxHxD):	375 x 235 x 150 mm
Weight - rack:	5 kg
Environmental conditions	
Ambient temperature:	5...40°C (20...25°C is recommended)
Humidity:	15...80 % r.h. (non-condensing)
Pollution degree:	2
Computer and OS requirements	
Operating system:	MS Windows 7 Pro (32/64-bit) or MS Windows 8 Pro (32/64-bit) or MS Windows 10 Pro (32/64-bit)
Processor:	minimum Intel® Core TM i3
RAM:	minimum 2 GB (4 GB is recommended)
Hard disk:	8 GB of available hard-disk space for installation
Expansion slots:	PCI expansion card slot for RS485 (optional)

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