



# VIMAP PORTABLE

## Mobile transformers oil dehydration unit

### New oil is not dry oil

Transformer oil delivered by the manufacturer is not dry and not suitable for filling into electric equipment.

According to IEC 60296, new oil delivered in drums or IBC has a max. water content 40 ppm (mg/kg) while min. dielectric strength is low as 30 kV (120 kV/cm).

Such oil will further degrade with time due to improper storage, bad sealing and variation of ambient temperature.

Specification IEC 60296 requires new oil before filling into electrical equipment to be additionally treated in order to increase breakdown voltage to min 70 kV (280 kV/cm)

### Problem of moisture in oil

Moisture in oil has devastating consequences on power transformers safety and reliability. No matter how small, it decreases transformer oil dielectric strength and accelerates degradation of solid insulation.

Increased moisture in oil will have irreversible negative consequences on cellulose insulation lifetime.

Water will also cause premature additives depletion.

In worst scenarios water can be cause of transformer malfunction and sudden breakdown.

Water in power transformers occurs from three sources:

- » water left from production
- » atmosphere water absorbed through unmaintained breathers and gaskets
- » water created by cellulose depolymerization, i.e. thermal degradation

### Solution

VIMAP PORTABLE is simple and reliable system designed for dehydration and filtration of transformer oil.

It is suitable for use while the oil is in power transformer, in barrel, in IBC, for new oil prior to filling into the transformer or to be used simply as a transfer pump.

Depending on specific customer requirements VIMAP PORTABLE custom and modular design allows us to meet any requirement.

Oil dehydrated is performed by means of granulated synthetic adsorbents (molecular sieves) which attract water molecules and permanently hold them in the pores of their active surface.

The gear pump draws insulating oil from the lowest point of the transformer tank or from the barrel and sends it through adsorbent and fine filter and returns it to the transformer tank or barrel.

### VIMAP PORTABLE features

**No oil heating**

**No oil vacuuming**

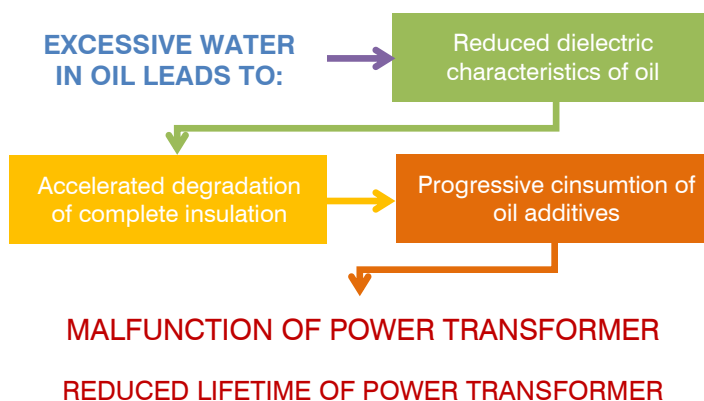
**No antioxidant additives removing**

**No dissolved gasses removing**

- » Oil dehydration by water adsorption
- » One vessel filled with 25 kg of synthetic adsorbents (molecular sieves)
- » Water holding capacity – appx. 5 kg (basic configuration)
- » Mobile trolley or frame mounted
- » Control box
- » Electric motor – up to 0.55 kW
- » Pump with bypass valve 0-1200 l/h
- » Frequency converter
- » Particle filter 10  $\mu$ m
- » Manual motor starter
- » Flexible hoses (2 x 5m) with quick release couplings
- » Available in several sizes and configuration to suit all power transformer sizes and conditions
- » Custom made designs are available according to specific customer's requirements

### Options

- » Continual on-line direct reading sensors mounted on both inlet and outlet lines of the system display moisture contents (ppm) and oil temperature ( $^{\circ}$ C) and indicate adsorbents saturation level
- » LCD display
- » Flow indicator or flow meter



# VIMAP PORTABLE

## Mobile transformer oil dehydration unit



VIMAP 6 PORTABLE – Mobile transformer oil dehydration unit



### Adsorbents saturation

Level of adsorbents saturation is monitored by moisture sensors. Comparing inlet and outlet moisture content readings it is easy to determinate efficiency of adsorbents. When the vessel is saturated, i.e. when the input ppm is very close to being the same as the output ppm, then the vessel can be exchanged.

## Dehydration Characteristics

Oil characteristics	Unit	Before	Pass no 1	Pass no 2	Pass no 3
Water content	ppm	100	< 20	< 10	< 5
Dielectric strength	kv/cm (kV)	80 (20)	160 (40)	240 (60)	>280 (70)

## Technical Specification

Type	Flow	Power consumption	Dimesions	Adosrbent capacity (without replacement)*	Weight
	lit/h	kW	mm	kg (of oil)	Kg
VIMAP - 6	600	0.55	594x878x491	50000	110

\* The average quantity of oil in kilograms, which can be dehydrated without replacement of adsorbent cartridges, provided that there is no inlet of free water and tar into the device. Free water or tar draining from the bottom of tanks or transformers required. Replacement of cartridge with saturated adsorbent is done simply by means of quick release couplings. Device manual contains everything you need for easy operation and maintenance

### VIMAP d.o.o.

Braće Jerković 137, 11000 Belgrade, Serbia  
 Tel: +381 63 257853 • +381 65 4342429 • +381 64 2027420  
 Fax: +381 11 24 69 724

This document is illustrative. Technical characteristics listed in this brochure are not applicable in all designs and may vary depending on unit configuration - to be defined in each individual case.

For additional information about our products and services please contact us at [office@vimap-technics.com](mailto:office@vimap-technics.com) or visit our website [www.vimap-technics.com](http://www.vimap-technics.com)

