



## VACUTAP® VR for China's power supply bureaus

More and more chinese utilities are using MR vacuum technology. The reason is naturally both the extremely reliability and the freedom from maintenance up to 300,000 tap-changing operations. Our photos show a 250MVA/220kV transformer in the Province of Ning Xia, equipped with VACUTAP® VR and ED motor drive unit. ●

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### Win a digital camera: At [www.switch-to-300000.com](http://www.switch-to-300000.com)!

In just 14 days - on June 16th, 2006 to be exact - our big contest promoting the new VACUTAP® VR 1300 will draw to a close. The VACUTAP® VR 1300 is the world's first on-load tap-changer to be maintenance-free up to 300,000 switch operations.

Participation in the contest has far exceeded our expectations. Several hundred customers from all over the world have visited [www.switch-to-300000.com](http://www.switch-to-300000.com) and registered. If you would like to participate too - it's certainly worth your while. Valuable digital cameras and other prizes await you. Pass the word on to your colleagues too!



# Practical Test in South Africa

## Retrofitting a Mobile Transformer with Messko Instruments



The "Ubejane" Mobile Transformer of Eskom Pietermaritzburg retrofitted with Messko instruments.



In today's times, the quest for more accurate, more optimized and more reliable measurement of transformer conditions is more essential than ever. Reliable measurement and data logging of the transformer's conditions has become instrumental in planning maintenance and calculating the life span of a transformer.

MESSKO has, over the last 70 years, established themselves as a market leader in monitoring and control of certain parameters in a power transformer, for example Temperature, Pressure, Level and Moisture.

Recently, WIKA Instruments (Pty) Ltd. a South African company, was presented with an opportunity to demonstrate these products on a working "Mobile Transformer" located in Pietermaritzburg, KwaZulu-Natal, South Africa. In close co-operation with Mr. Fred

Pieters of Eskom Pietermaritzburg, it was decided to use the "Ubejane" (Zulu for rhinoceros) **Mobile Transformer** as the transformer to be fitted with a range of MESSKO devices.

The first step of the conversion, or even metamorphosis, was to exchange the old mechanical temperature devices for a new Temperature Monitoring / Data Logging Device.

MESSKO developed the new EPT202 (MTeC®) as a Temperature Monitoring / Data Acquisition System. Although many manufacturers make a similar device, it is often financially crippling to purchase such a device. With MESSKO's new MTeC® a transformer monitoring device is available at +15% of the price of conventional monitoring devices. →

## Practical Test in South Africa

### Features of the MTeC® include:

- Advanced thermal modeling through individual programmed parameters.
- Dynamic altering of the parameters to match the present cooling mode (ONAN, ONAF, OFAF, etc.) according to IEC 354.
- Indication and long time data logging of 1 x OTI, 3 x WTI & 2 x Oil Levels.
- Continuous and automatic self diagnostics.
- Easy Set Function-preset parameters, according to IEC 354.
- Available in 19" Rack or DIN Rail Mount Version.
- Life-time calculation formula.

To begin, all alarm and trip contacts from the old mechanical units were rewired to the newly installed 19" rack-version MTeC®. The MTeC® will monitor/log parameters to the MESSKO Software and these will in turn give life consumption of the transformer in percentage.

Next in line were the breathers. Conventional Breathers have traditionally been devices that required cleaning of the oil chamber and regular inspections. In addition, changing of the silica gel had huge cost implications on transformer operators. MESSKO has successfully designed and manufactured a maintenance-free breather called the MTraB®. The oil chamber is replaced by a sintered metal filter.

The second problem faced was the changing of the silica gel. The solution? Time / condition controlled heating cycles that will regenerate saturated silica gel.

The conventional breathers were exchanged for MESSKO's MTraB®, and no installation problems were encountered. All flanges/threads used on conventional devices are available from MESSKO. The only new addition was a power supply to the new breathers.

### The new MTraB® has the following features:

- No silica gel or oil changing
- Useable in any environmental condition
- Self-monitoring and remote control system
- Easy Retrofitting is possible
- No pollution and disposal problems.

The third step of the metamorphosis was to exchange the old pressure relief device for MESSKO's new MPreC® PRD.



Old device



MTraB®



Old device



MTraB®

At a glance it may seem that the devices are the similar, but through MESSKO's innovation, the following aspects have been improved upon:

- Protection of the main parts against environmental influences, via a sea water resistant protective cover.
- No leakage problems owing to the use of a special "inlaying" gasket design with machined cast components, which ensure a perfect fit and no edges.
- Prevention of erroneous releases and fatigue failure, by using precision KTL Coated springs.
- Prevention of signal pin backsliding with a self-locking signal pin.
- Computer controlled release test for each valve, including a test report supplied with each valve.
- Helium leakage test for each valve.

After completion of this project it can be safely said that "Ubejane" is now the most well-controlled and well-monitored "Rhino" in Southern Africa. ● [Kobus De Villiers](#)

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# Worldwide Calibration service

by HIGHVOLT Calibration Laboratory DKD-K-24501



As a manufacturer of high voltage test and measuring equipment, HIGHVOLT Prüftechnik Dresden GmbH operates a DKD-Calibration Laboratory (DKD – German Calibration Service). The task of this laboratory is not only the calibration of new high voltage measuring systems, but also a worldwide calibration service for existing high-voltage test fields delivered by HIGHVOLT and/or other manufacturers.

The user of measuring technique, also in high voltage applications, is confronted with the demand of technical and quality assurance standards (as ISO 9000 series, ISO/IEC 17025, IEEE Standard 4.1995) to work with measuring systems calibrated traceable to a basis reference for voltage measurement maintained by a National Metrology Institute (in Germany: Physikalisch-Technische Bundesanstalt (PTB)).

Traceability is a process whereby a measuring system or an instrument can be compared, in one or more stages, with a National Standard. In each of these stages a calibration has been performed using a standard with a metrological quality already determined by calibration with a higher level standard.

Accredited calibration laboratories are established to safeguard the technical measurement infrastructure of a country. They realize most of routine calibration work for HV departments of companies or in-house calibration sections.

The HIGHVOLT calibration laboratory was accredited as DKD-Calibration Laboratory in April 1999 with the indication DKD-K-24501 for high voltage measuring quantities and high voltage measuring equipment. Meanwhile the HIGHVOLT DKD-Calibration Laboratory is certified according to DIN EN ISO IEC 17025.

As DKD-K-24501, the HIGHVOLT laboratory is accredited and supervised by the PTB according to fixed criteria. The DKD is signatory to the multilateral agreements of the European Co-operation for Accreditation (EA) and of the International Laboratory Accreditation Cooperation (ILAC) for the mutual recognition of calibration certificates. Therefore DKD-Calibration Certificates are accepted in countries all over the world.

HIGHVOLT supplies the calibration service for measuring devices and dividers up to

- 1500 kV DC (at HIGHVOLT / on-site)
- 1000 kV AC (on-site)
- 3000 kV AC (at HIGHVOLT)
- 3500 kV LI (at HIGHVOLT / on-site)
- 2500 kV SI (at HIGHVOLT / on-site)
- Peak voltmeters (at HIGHVOLT)
- Standard capacitors (at HIGHVOLT / on-site)
- C/tand-measuring bridges (at HIGHVOLT / on-site)
- Digital recorders (at HIGHVOLT / on-site)

(Ranges and uncertainties of measurement of the Calibration Laboratory DKD-K-24501 see also

[http://www.dkd.info/en/\\_laboratorien.htm](http://www.dkd.info/en/_laboratorien.htm))

The benefits from a calibration by the HIGHVOLT Calibration Laboratory are as follows:

- Competent advice concerning all questions of calibration service and calibration technique and procedures by our highly qualified and very experienced staff
- Independent consideration of each calibration procedure, hints for improvement if necessary
- Time and cost effective on-site procedures without risk for the calibration object
- Clear demonstration of the traceability of the measurement – long discussions with assessors of accreditation bodies can be avoided

The HIGHVOLT calibration laboratory has carried out more than 1600 calibrations not only in Germany, but also for instance in Saudi-Arabia, Singapore, Iran, the Netherlands and many other countries. ●

For questions concerning calibration and for inquiries, please, contact us as follows: Calibration laboratory DKD-K-24501

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Calibration of the voltage measuring system of a mobile AC test system in Saudi Arabia



Calibration at the TU Graz



Calibration of an impulse voltage measuring system



After a successful calibration at Iran Transfo in Iran

# Big audiences for VACUTAP® VR 1300

## MRcademies in Kuala Lumpur and Taipei



With two big events in Kuala Lumpur and Taipei Reinhausen Asia Pacific (RAP) introduced during March the advantages of the new VACUTAP VR 1300. MRcademy Kuala Lumpur saw the largest gathering of professionals from the power generation, transmission and distribution power industries from Malaysia, Singapore, Indonesia and the Philippines. RAP General Manager Max Philipp welcomed 146 participants at the Kuala Lumpur Conference Centre. Main focus of the lectures was on asset management for tap-changing power transformers. In addition there were presentations on new trends in automatic voltage regulators and monitoring of transformer temperature

with Messko instruments. MRcademy Taipei attracted a total of 87 participants within Taiwan including Taiwan Power Company (TPC), transformer makers, private users and consultant companies.

In addition to the presentations that were made, RAP also displayed the complete demo unit of VR + ED, TAPCON series, MTRAB®, MPREC®, MTEC® & oil thermometer, which were flown in from Germany. All presenters were on hand to welcome queries or questions that was of interest to the participants with regards to the topics and displayed items. ●

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Impressions of MRcademy Taipei

## MRC welcomes high official

Erwin Huber, Bavaria's Minister of Economic Affairs, visits Guangdong MR LTC Ltd.



During a trip through Asia with a delegation of economic experts, Bavaria's Minister of Economic Affairs, Erwin Huber, also paid a visit to Guangdong MR. He was accompanied, among others, by the German General Consul Bruhns. General Manager Jens Lipp of Guangdong MR LTC Ltd. began with a presentation of MR's Chinese subsidiary. Among other things, he touched on the problem of the theft of intellectual property by Chinese companies. All attending company heads reported similar experiences at their companies. Minister Huber promised his support, including taking the matter to the highest levels of government. Next, Service Manager Sepp Zhong made a presentation at the Training Center. During the tour through the two assembly levels which followed, the guests took advantage of this opportunity to have the assembly processes explained to them by Operation Manager



Minister Erwin Huber and a German delegation visited Guangdong MR LTC Ltd.

Bruce Tian. The tour was concluded with a group photo at the test stand of the V tap-changer where the guests again praised the cleanliness and clarity of the processing sequences. ●

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