



TRANSFORM 2004 goes Asia

Anyone keen on attending a nicely compact-sized conference and meeting impressive numbers of internationally renowned specialists from the transformer business should definitely earmark TRANSFORM 2004 in their planner. Twice already – in 1998 and in 2001 – this specialist trade conference all around transformers was a big success in Europe.

This coming year, the event will go to Asia: On March 18th and 19th, 2004, the TRANSFORM will have a two-day stopover in Thailand (Pattaya). Among the event's organizers are MR (OLTC, electronics, Power Quality Management), Messko (measuring apparatuses), HIGHVOLT (testing equipment), HSP (insulating bushings), Röchling (technical plastics), EMB (transformer protection equipment, electronic control gear), Pfisterer (contact systems for energy networks), and a number of other renowned specialists from the business.

Whether transformer manufacturer or power supply company – the focus of TRANSFORM's attention is always on professional exchange with colleagues from all over the world. Renowned experts will be giving presentations and conducting workshops. Also, there will be an exhibition displaying numerous new developments. Last but not least, the exhibition is accompanied by attractive highlights for golfers and wannabees who yearn to know more about the sport.

Information all around TRANSFORM 2004 will soon be available under www.transform2004.com and www.reinhausen.com. Also, be sure to check the upcoming issue of INSIGHT to find out more about TRANSFORM 2004.

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Although this newsletter has been prepared with the greatest of care, it cannot be guaranteed that the information is free of errors and accurate.

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VACUTAP® in Hungary

MR's vacuum technology drew considerable crowds at the INDUSTRIA trade show which took place in May in Budapest. To the surprise of sales engineer Erwin Zeisig (left), the Bavarian Minister of Commerce, Traffic and Technology, Dr. Otto Wiesheu (second from left) was astonishingly knowledgeable about the functional principle of on-load tap-changers.



News from Dallas

For the business and professional circles of North America, it is one of the event highlights of the year: the IEEE Conference and Exhibition taking place in Dallas between September 7th and 10th. Says Bernhard Kurth, Managing Director of Reinhausen Manufacturing: "We will be exhibiting our brand-new VACUTAP® VR and the RMV-II – both featuring our time-tested MR vacuum technology. Messko's novelty exhibit will be their maintenance-free MTrab dehydrating breather." Anybody interested in finding out more should definitely not miss the info event scheduled for September 10th between 13:45 and 14:45 hours.

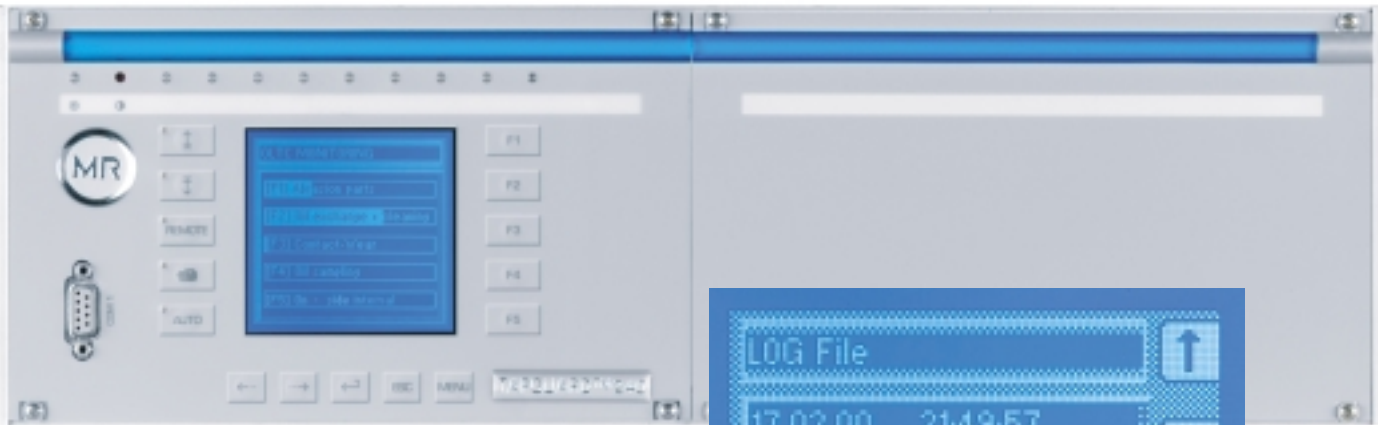
Change-of-command in São Paulo

Change in management at MR do Brasil: Markus Klein has followed in the footsteps of Joao Visetti, who left the company. Before joining MR do Brasil, Klein was employed as area sales manager at another of MR's subsidiaries, Reinhausen Asia Pacific of Kuala Lumpur, Malaysia.



OILTAP®-OLTC with TAPGUARD™ 240

Simply everything under control.



Reduce your costs by optimizing maintenance of your equipment - an important way to beat the competition. TAPGUARD™ 240 from MR now offers an attractive system solution which will help you to achieve this goal. This device was especially developed for the maintenance of OILTAP® on-load tap-changers (tap changing in oil). Medium and high-performance power transformers are its primary application area.

TAPGUARD™ 240 calculates the primary maintenance criteria of the on-load tap-changer. It shows you the current status and gives you the time remaining until the next maintenance job. The primary difference from other devices available up to now is its ability to give you easy-to-understand information on operation management which you can utilize right away without expert knowledge.

Highly complex calculations take place in the background (e.g., to determine soot content of the oil or contact wear). The algorithms are based on almost 50 years of service experience with MR OILTAP® on-load tap-changers. It gives you the edited data which you can use immediately to optimize maintenance tasks.

An overview of the benefits

- Increased reliability of the transformer
- Lower product life-cycle costs (on-load tap-changer)
- Optimized maintenance
- No more failure to deliver electrical power because of maintenance work (increased availability of the transformer)

The function

When the time for service has been reached or a status criterion of the on-load tap-changer, TAPGUARD™ 240 outputs a group signal (relay contact) and a visual warning (flashing bar). Each criterion is assigned to a F(function)-key which supplies additional information when you press it - projection of the time until the next maintenance job, for instance. This makes planning the next maintenance job much more efficient.

The operation

Additional functions for daily operation have been integrated. You can utilize a criterion (based on number of operations or on time) for your own operation management tasks (e.g., "inspect



the system every six weeks"). A "life file" gives you a complete list of the time and scope of every maintenance job.

Planning, installation and commissioning

Monitoring systems usually have complex software functions and a multitude of sensors. The result - high planning and setup costs. Moreover, you cannot run the system without an abundance of specialized knowledge.

When TAPGUARD™ 240 was developed, special emphasis was placed on simplifying system planning and installation. All necessary information for status evaluation of the on-load tap-changer resembles that of an ordinary voltage regulator. In particular, the voltage regulator offers information on

- Current through the equipment
- Tap position

Because of this, the device can be used as an add-on to the new TAPCON® brand voltage regulators. Of course, it can also be used as a stand-alone device.

This gives you even more advantages.

- No additional hardware necessary when you use a TAPCON® voltage regulator with the TAPGUARD™ 240 add-on function
- No extra wiring of sensors and command and response information required
- Up to 90% of system planning for a TAPCON® can be used for the TAPGUARD™ 240 too.

Further Informations: www.tapguard.com

MPreC – Pressure Relief Devices

Protection without compromise



We have always taken a special interest in monitoring the "work horses" of energy supply. Demands on transformer equipment are rising steadily. As operating times increase, reliable monitoring equipment becomes essential.

MPreCs are pressure relief devices for transformers and tap-changers – in MESSKO's reputable high quality. Our objective has been to improve and expand existing functions. During normal operation, a pressure relief device should have a tight seal. However, in cases of malfunction, it must release promptly and transmit the corresponding signal. This protects the transformer and/or tap-changer from suffering more serious damage. With MPreC, we have succeeded in optimising this core function.

Quality you can feel

Your fingers can tell you what sets MESSKO pressure relief devices apart from the rest. No perceptible sharp edges, perfect fits, high-quality materials.

If you want to protect your transformers and tap-changers, you can't settle for less than the highest quality. We exclusively use high-quality materials – such as saltwater-proof, cast aluminium and anodised aluminium.

The first relief device with self-protection

Our pressure relief device protects itself with a saltwater-proof cap. This cap shields all functional components from external influences. This means that neither damage nor impurities can influence its release performance.

The internal signalling contacts and valve disks are protected from direct environmental influences and vigorous lacquering work through its standard integrated cover. The outlet openings provide for immediate, downward oil drainage.

It pays to be precise

Just as important as perfect quality is reliable and error-free assembly. We ensure this through qualified expert personnel, equipment that is easy to use, and clearly-defined procedures.

Each device is checked for leaks using helium. In addition, the "sealing" and "release" functions undergo computer-controlled testing.

A separate report is written for each individual test. This is a security guarantee for our customers that our employees confirm with their signature. ●

Further information
is available at:
www.messko.de

MPreC™
protected



Filter Circuit Systems for Turbine Test

PQM Systems Used for MDS Aero Support and Rolls Royce

Aircraft turbines of well-known manufacturers (Rolls Royce, among others) are tested and further developed at the new testing grounds of AneCom Aerotest GmbH in Wildau (25 km southwest of Berlin). High demands are placed on the flexibility of the testing technology of world market leader MDS Aero Support Ottawa (Canada).

A variable speed setting during the test cycle requires the use of 12-pulse converters with a capacity of almost 20 MW. The system was given its own connection to the 110 kV power network for integration of the test stand into the electrical transmission network of E.dis. Operation of the converters requires 20 kV medium-voltage filter circuits. They compensate for reactive power consumption from the E.dis transmission network and reduce network distortion by harmonics during test operation.

During the planning phase, PQM-Berlin prepared a technical concept for integration of the medium-voltage reactive power compensation. The turnkey contract with the Canadian customer covers all electrical, acoustic and construction design. The complete system was installed in only ten weeks after construction scheduling, noise prevention studies and building permits



A special feature of the 3-stage 20 kV filter circuit system with a total capacity of 6 Mvar is a 7.5 m high noise control wall to reduce the noise level in Wildau.

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Active Filter System for Fish Factory on the Faeroe Islands

PQM Berlin: Aid against power perturbations of cooling compressors



The Faeroe Islands operate their own power supply network which is not integrated in the European power network due to its location in the Atlantic - literally an island network. Since this network is particularly prone to interference by harmonics due to the low short circuit capacity, the SEV power provider strictly watches that power customers do not exceed specified harmonic limit values.

When a new highly automated fish processing factory was built, there was the problem that the powerful frequency inverters of the cooling compressors with a power consumption of 6 x 750 kW generate strong harmonic currents which totally exceed limit values, even though a harmonics-reducing configuration of the 22 kV power transformers was selected. This already practically eliminated the harmonics of the 5th and 7th harmonic.

Since the units also generate very different harmonic interference with fluctuating loads, a tuned filter circuit could not be used and an active filter of the AcF series was selected instead. These devices measure the harmonics load in network current



and, as controlled current source, feed in their harmonics to the network to eliminate this sum. The capacity of the active filter system of 350 kVA was measured so that the harmonic limit values are adhered to under all load conditions.

The special feature of the filter system is that the active filter system with a rated voltage of 400 V was connected directly with a separate transformer (step-down transformer) to the 22 kV medium voltage network of the factory. PQM Berlin performed the complete simulation of the network load to dimension the filter systems. In the meantime the systems have been delivered and have passed initial inspection by the power provider. The real test will come during the fall when the fishing season begins.

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Effective Performance under Extreme Conditions

Reliable and effective performance under the harshest and most severe conditions: This requirement is admirably fulfilled by the ED motor-drive mechanisms installed in the Zeya water power station in Russia's Far East, a region which is characterized by a continental climate and annual temperature variations of up to 80 degrees Celsius. This 1,330-Megawatt power station is located in the Amur region, near the city of Zeya, and supplies power to densely populated areas like Habarovsk, Vladivostok, and Blagoveshensk. OOO "MR" installed these motor-drive mechanisms during the course of restructuring the power station's on-load tap-changers. Incidentally, this power plant's constant voltage is secured by MR's TAPCON® 230 voltage regulators! The power generated here is transferred to Habarovsk and Vladivostok via a 500-Kilovolt overhead power transmission line, and to the Amur region and the Baikal Amur Railroad via three 220-kilovolt lines. ●



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We make maintenance mobile



Rolling workshop with crane wagon
Crane: Range: 13.60 m, load at max. range: 320 kg

Would you like professional on-load tap-changer maintenance service without having to go to much trouble yourself? Then our full service is exactly right for you. All you have to do is open your transformer station and disconnect the transformer. We will take care of the rest - with our service mobile which is equipped with a complete workshop in addition to crane and oil pump.

We bring everything with us

- Specifically trained personnel
- Vehicle with workshop
- All necessary spare parts, special tools and measuring devices
- Tested new oil, empty barrels (we take care of the oil disposal too)
- Oil pump with hoses and connection pieces

- Suitable lifting equipment for pulling the diverter switch unit (loading crane or lifting equipment with different base plates for securing on the tap-changer head)
- Work tent (i.e. work possible under all weather conditions)
- Ladder

When may we come?

Our service mobile is available to you in Germany and neighboring countries. If you would like an offer without obligation, just use the online form under "After Sales Service" on our homepage. ●

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