Doepke

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The experts in residual current technology

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DOEPKE-INFO-ZEITUNG

FREE CUSTOMER NEWSLETTER BY DOEPKE SCHALTGERÄTE GMBH

IN THIS ISSUE

Doepke becomes e-brand partner

The e-brand partner quality alliance continues to grow

At Light+Building in Frankfurt am Main, Andreas Müller signed the e-brand partnership contract at the ZVEH stand. His signing of this document confirms Doepke's partnership with the association of electricians.
The industry-wide brand alliance for the electrical trade now comprises 51 companies from the industrial, wholesale and insurance fields. The e-brand partners constitute a quality alliance for the electrical trade with a clear commitment to the three-tiered distribution route. ■

Andreas Müller
Managing Director

▲ *From left to right: Klaus Pick and Lothar Hellmann, Joint Vice Presidents of ZVEH, Andreas Müller and in the background on the right, Burghard Schulze, Compliance Officer for ZVEH*

Beach fun in Frankfurt

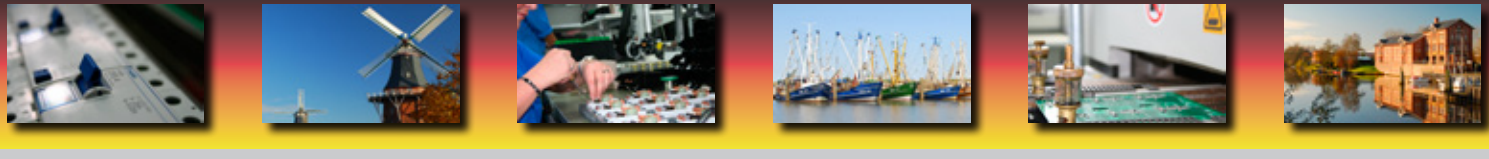
A detour to the East Frisian islands – from Light+Building

Visitors to our trade fair stand C51 in Hall 8.0 were able to experience a bit of what it's like on the East Frisian island of Juist.

◄ *Many interesting discussions and new contacts were made.*

▼ *New products and tried-and-tested technology was not just there to be admired – visitors were also able to try them out.*

► *Even Garrelt Duin, Minister for Economy, Energy, Industry, Small and Medium-Sized Businesses and Trade for the German state of North Rhine-Westphalia, paid a visit to our East Frisian beach stand. Pictured here with Andreas Müller, one of our Managing Directors.*



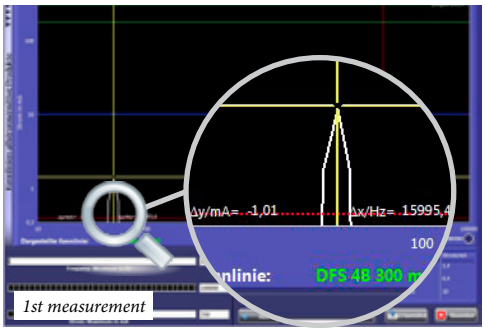
Residual current measurement in agricultural operations

Undesired tripping was analysed using the DRCA 1 system

Initial situation: about a year ago, a feeding system operated via a frequency converter was put into operation at the premises of an agricultural business. As fire protection must be ensured, the feeding system was fitted with an upstream RCD 300 mA, type DFS 4 B NK. After the installation of a photovoltaic system on the roof of the stables, the RCD began tripping multiple times when the animal feed pump was operated and the sun was shining at the same time. Even on cloudy days, the RCD would switch off occasionally as well. The PV system technicians installed a mains filter in the supply line, but this attempt to correct the problem was unsuccessful.

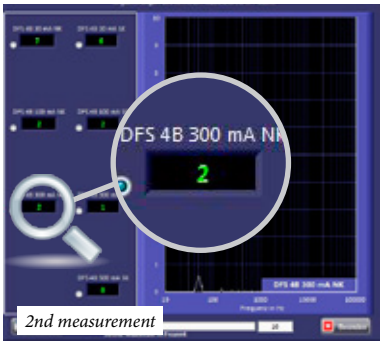
Analysis: a residual current analysis system from Doepke was deployed for the measurement. The system consists of the DRCA 1 measurement unit, the DRCA 1 CT 70 residual current transformer and a notebook with the DRCA 1 SW analysis software installed. The residual current transformer was installed directly behind the RCD in the supply line to the feeding system.

1st measurement: with voltage present. In this system state, only very low leakage currents (1.4 mA) occur at 50 Hz.



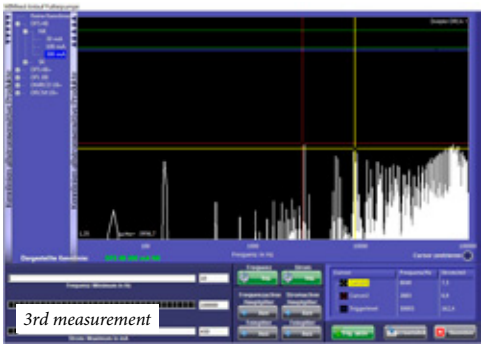
1st measurement

2nd measurement: to ensure that an RCD with 300 mA NK is only loaded with 2% and therefore does not trip.



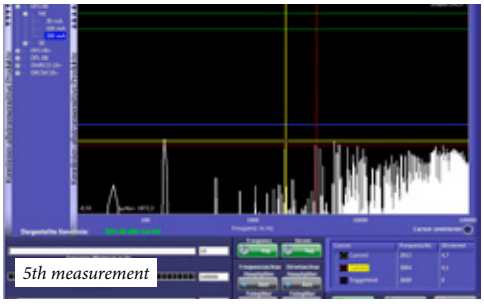
2nd measurement

3rd measurement: when the frequency converter for the animal feed pump is operated at the originally set tact frequency of 8 kHz, a number of leakage currents occur in a range from 1 kHz to 100 kHz, the sum of which causes the RCD to trip. After consulting with the customer service department for the feeding system, an attempt was made to change the tact frequency in order to reduce the leakage currents.

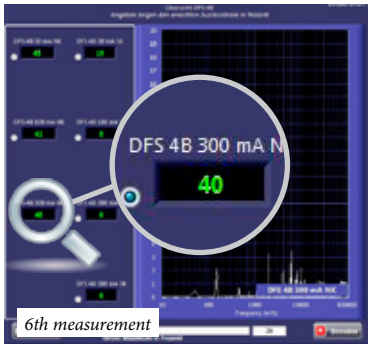

3rd measurement

4th measurement (image not shown): a test was performed in which the frequency converter for the animal feed pump was operated at a tact frequency of 4 kHz. A number of leakage currents occurred in this case as well, in a range from 3 kHz to 100 kHz, the sum of which causes the RCD to trip.

5th measurement: after reducing the tact frequency little by little, the frequency converter for the animal feed pump was then operated at a frequency of 2 kHz. Even in this case, a number of leakage currents occurred in the range of 1 kHz to 100 kHz, but the amplitude was so reduced that these leakage currents did not cause the RCD to trip. The settings were left unchanged once it was determined that no abnormal noises were coming from the pump motor.


5th measurement

6th measurement: the assessed frequency analysis shows that an RCD with 300 mA, type B NK is loaded at approx. 40% and therefore operation of the animal feed pump is possible. Operation with an RCD with 30 mA, type B NK should even be possible (fire protection guaranteed) because most of the leakage currents occur in the top frequency range.



6th measurement

Result: as the animal feed pump is located in a fire-risk facility and operated with a frequency converter, DIN VDE 0100-420 stipulates that the system must be protected with an RCD with 300 mA. DIN VDE 0100-530 stipulates that an RCD type B must be used because the frequency converter may generate smooth residual currents if an error occurs. The DFS 4 B residual current circuit-breaker with NK characteristic curve is designed for this application. When the tact frequency was left unchanged at its preset 8 kHz, high leakage currents occurred in the lower range of the tripping characteristic curve, causing the RCD to trip when an additional 'event' occurred. Reducing the tact frequency to 2 kHz did result in the significant reduction of leakage currents, where the RCD was only loaded to 40%. The animal feed pump can be operated. If operating the animal feed pump at a tact frequency of 2 kHz is not reasonable, an attempt could be made to keep leakage currents low using a suitable filter installed in the supply line to the animal feed pump. ■

Report by Roland Lange
Industry Representative
Werner Ott GmbH, Rossau
www.iv-ott.de.

Eliaden in Lillestrøm

Eliaden is one of the top trade fairs in Scandinavia for the electrical industry. This year it took place in Lillestrøm, Norway, on 2–5 June. Divided into three exhibition areas, the trade fair hosted the complete product and service spectrum of the electrical industry: technologies for the energy sector, technologies for industry, and technologies for building construction. Visitors of stand D03-18, operated by Larel AS, had the opportunity to learn about Doepke products and others. ■

New on the net

Doepke's online presence introduces new sides (and pages) of the company

Doepke has had a brand new online presence since April 2014, with its website featuring a new design and user-friendly layouts.

These questions were addressed through intensive research and various discussions, resulting in the product layouts and design being perfectly matched.

A team of seven meticulously planned the new website over the course of one year. This team comprised three specialists from the IT department and four from Marketing. The IT department was represented by Günther Oldendorf (Head of IT) and his colleagues Marc Brandt and Alfred Trauernicht. Marketing was represented by Johann Meints (Head of Marketing), Jochen Janßen (Head of Product Management), Tim Wodraschka (Digital Media Designer) and Sylvia Barkhoff (Digital Media Designer and Project Manager).

The content and design of the company's image was laid out by the Marketing team, while the technical implementation of the project (i.e the programming) was left in the capable hands of the IT department.

The entire image and feel of the new pages were naturally based on the corporate design, but it wasn't that simple. The product information had to be meaningful for the end user and easy to find, and the entire website had to be user-friendly and quick to navigate. But what does 'user-friendly' mean? And which design would support this, whilst having the desired effect at the same time?

The product data was arranged in the database-oriented Product Information Management (PIM) system explicitly for use on the internet and exported as an XML file. The extensive product range had to first be incorporated into a type of "modular system" where users could quickly orientate themselves.

The design proposed by Sylvia Barkhoff was implemented by the IT department with a content management system. Special enhancements were built, for example in order to integrate the product range or interactive map. Product data is exported from the PIM system daily, and automatically transferred so that the product range on the homepage is always up-to-date.

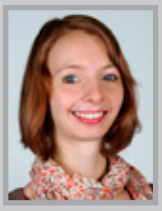
A special site highlight is the product quick search integrated into the product area. Specific features such as number of poles, rated current and type of tripping characteristic curve, or even the item number, can be selected as search criteria in order to find the right product more quickly. If a user already knows what they are looking for, then they can also use this search feature to fast track their search.

▲ *Here are a few screenshots from the new pages. Have a look for yourself!*

Why not take a look for yourself? Your feedback can help us make further improvements, so we would very much welcome your thoughts.

Send your feedback to:
Sylvia Barkhoff (Marketing)
sylvia.barkhoff@doepke.de
Tel.: +49 4931 1806 -824 ■

Main team members



Sylvia Barkhoff
Marketing

Jochen Janßen
Product Management

Marc Brandt
IT

Alfred Trauernicht
IT

Uta Rosenboom

Accounts Department

After completing her training as a qualified tax consultant, Uta Rosenboom began working with us in November 2009.

Her first role was as an installer in the production of tripping devices. She also worked as a representative in the Dispatch department. In August 2013, Ms Rosenboom switched to the Accounts department because of her background and became a tax consultant for the company.

She has been taking classes in her free time to become a financial accountant since the beginning of this year.

During the street bowling season, she spends her weekends 'on the road' practising the national East Frisian pastime. ■

Look-alike?

Stephanie Thalmeier, branch manager of our retailer Doerner, has a dog that closely resembles our current mascot. ■

▲ *It would be easy to confuse the two!* Charly ►

First aid course for Doepke employees

How to react in an emergency and the ventricular fibrillation threshold

Doepke has had a defibrillator on site for some time now, which can also be operated by non-medical personnel. A first aid course has now provided detailed training for first aiders on how to use the device.

Ventricular fibrillation frequently occurs before the heart stops. A defibrillator is used to prevent this 'disruption to the heart's frequency', using targeted electric shocks to restore the normal heart rate. Attempts at resuscitation can then be started by massaging the heart.
Electric shock can also trigger ventricular fibrillation. The human ventricular fibrillation threshold depends on the body's structure, heart condition, as well as the duration of the shock and the amount of current involved.

Ventricular fibrillation threshold:

- With a sinusoidal current of 50 Hz, the ventricular fibrillation threshold lowers if the current flow is longer than one heart cycle.

Effect of the current:

- Muscle contractions
- Increased blood pressure
- Disruption of the electrical conduction system
- Atrial fibrillation
- Arrhythmia (not fatal)
- In the case of high current and duration > 1 second: burns (internal and external) and internal injury
- High-voltage accidents do not always cause ventricular fibrillation
- Ventricular fibrillation is often fatal because it prevents blood circulation (disrupted flow of oxygen)
- Difficulty calling for help (difficulty breathing)
- Paralysis of the respiratory muscles (fatal)
- Cell damage (no thermal effect, but perforation of the cell membrane, known as electroporation) irreversible damage leads to necrosis and amputation

Here's where we come in with our 30 mA residual current circuit-breaker.
These devices prevent the risk of ventricular fibrillation when current is passed through the body and therefore provide reliable protection. ■

▲ *Don't be shy: course leader Theodor Koch provides training.*

Birgit Esen
Assistant
Sales Management/
Head of
Internal Sales

DATES/NOTES

Company holiday
04/08 – 15/08
An emergency service will be available.

Belektro, Berlin
15/10 – 17/10
Hall 1.2, Stand 206

8th annual meeting for electrical safety
18/11 - 19/11
Darmstadt
www.jahrestagung-elektrosicherheit.de

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QUARTERLY QUOTE

To see clearly

often a change in direction is all that is needed.

Antoine de Saint-Exupéry

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