Doepke

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The experts in residual current protection technology

DIZ

DOEPKE-INFO-ZEITUNG

FREE CUSTOMER NEWSLETTER BY DOEPKE SCHALTGERÄTE GMBH

IN THIS ISSUE

The elite unite

Seminars on E-Tech

▲ *A really smart occasion: The symposium for educational institutions was well-attended*

The symposium for educational institutions took place in Munich from 24-25 September 2015. There were a total of eleven seminars over the two days. Our contribution was on the topic of 'AC-DC sensitive residual current circuit-breakers in practice'.

Lecturers from various educational institutions were given an insight into the latest developments, standards and regulations. The first day concluded with a group visit to the Oktoberfest in Munich.

The next symposium will take place from 09/12-10/12/2015 in Cologne. ■

Johann Meints
Head of Marketing

Light in the dark

The new Dasy TC is an inventive way to control light.

The new Dasy TC by Doepke combines the classic twilight switch with a timer switch for individual control of lighting. The additional TC ('Time Control') function makes it possible to turn off the light at certain times when not required, which is useful for signboards, paths, squares and also company car parks, for instance, and is a convenient way of lowering costs.

With its adjustment range of 1–200 lux, the twilight switch is a flexible solution that can be used to achieve a wide range of brightnesses; simply mount on the wall or on a mast.

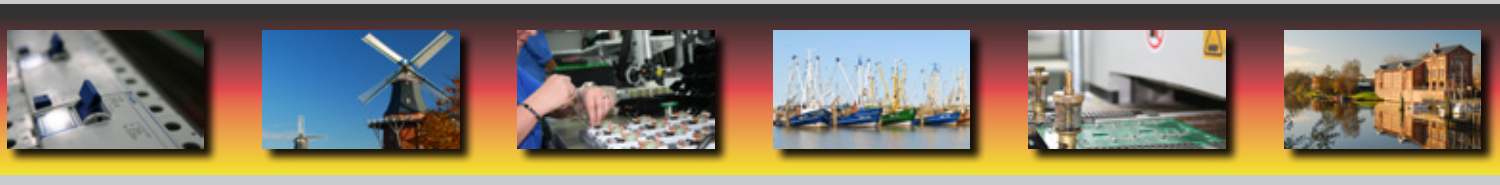
The device is intuitive thanks to a rotary push-button and an easily legible, temperature-resistant display. Switching times are to the minute and can be adjusted without the need for any additional apparatus. There is even the option to configure the device for automatic change-over switching between summer and winter time. Change-over switching between 12- and 24-hour format makes the Dasy TC suitable for use internationally, which is also supported by its quartz-stable circuit; as a result no time transmission device is required. The device has a supply voltage of 230 V AC at 50 Hz and 115 V AC at 60 Hz.

▲ *The Dasy TC complies with a number of standards. During normal use, operating elements and the display are hidden by the housing lid.*

Switching actions at the mains voltage zero point protect relays and lamps. In the event of a power cut, the clock time continues to be stored for several days and does not need to be re-programmed. Clock times are even stored permanently in a way that guarantees that the device's functions will not be impaired after a power cut.

The Dasy TC is a new addition to our tried-and-tested Dasy series, but still provides all the well-known benefits of the series. Quality – made in Germany. ■

Heino Thoben-Mescher
Product Management



Built to last
The Protection Box does just that

The simplest protection for mobile installations

▲ *The Protection Box version with two outputs*

Doepke's new Protection Box offers a high level of residual current protection, particularly for the construction industry and for other mobile applications.

The equipment used here is often controlled by frequency converters that, in accordance with VDE 0160 / EN 50178, must not be operated downstream of a Type A or F residual current device, as these can make them ineffective. The Protection Box comes into play when you need to achieve the prescribed level of residual current protection, but influencing the existing installation is not possible. It fulfils all requirements for AC-DC sensitive Type B SK residual current circuit-breakers and protects the upstream RCD from 'blinding', ensuring that functionality is maintained.

The Protection Box is a portable solid rubber distribution unit in protection class II. Its robust black housing is resistant to acids and alkalis, is unbreakable, and does not age. Its external metal parts are made of stainless steel, so are not affected by conditions on the building site.

Depending on the design chosen, the box comes with one or two 16 or 32 A CEE sockets. If two outputs are chosen, the active one is selected using a change-over switch.

The boxes are each fitted with a four-pole residual current circuit-breaker type DFS 4 B SK MI HD with a rated residual current of 0.03 A, which ensures the required level of personal protection. The HD design means that the switch is especially protected from external influences and can even be safely used at temperatures up to 60°C.

The Doepke Protection Box is available in three designs: the DPB 16 01-100 with 16 A input and output, the DPB 32 01-010 with 32 A input and output and the DPB 32 01-110 with a 32 A input and an output that can be switched between 16 A and 32 A. ■

Holger Freese
Product Management

Doepke products in the universe

Electrical engineering – stretching into infinity More than a million devices are available for WSCAD

A constant stream of new products, some standardised, some with their own wiring diagram, don't always make life easy for designers. However, they need to maintain a clear overview and come up with the best possible solution before building a new piece of equipment.

Software has always been one of the most important tools for a designer. It enables them to find the right (current) path, even for extensive installations. WSCAD is one of the most widely-used programs.

Since April 2015, additional product libraries can be imported into the user's installed software using the online portal *wscaduniverse.com*. It is then possible to filter over a million items of product data (according to the manufacturer) down to the ones that are relevant for your own work. This can reflect your own portfolio of available products or simply be used to find the right piece of equipment for a specific application 'on the go', as it were.

The Doepke product range has been fully integrated with all the technical data needed when designing and is easy to find using the manufacturer search. To search for an individual unit or specific purposes, master data such as the item number, product name, classification or purpose of each individual unit is also stored.

◄▲ *Screenshots:*
left – filter according to manufacturer (therefore displaying all Doepke products),
top – a search by manufacturer item number (search can also be by product name etc.).

Procedure

After registering on the website, which is free for WSCAD or EPLAN users, the products required can be added to your basket. The content can then be readily downloaded. To make the process easier, the downloads are provided as ZIP files. Once unzipped, the files can be easily imported into the design software and are available for use by the designer. ■

Jochen Janßen
Product Management

DFS 4 B SK MI Residual current protection without retro-fitting

Safe solution for unknown upstream protective measures

Innovation from Doepke: The DFS 4 B SK MI protects existing systems where the upstream protective measure is unknown or consists of a Type A residual current circuit-breaker. If the upstream device cannot be changed, this circuit-breaker provides a safe alternative.

According to the installation regulations, a Type A residual current circuit-breaker sensitive to pulsating currents must not be upstream of a Type B safety measure. DC residual currents greater than 6 mA can saturate the transformer of a Type A device, thus preventing it from tripping. The protection function would no longer be fulfilled. In existing systems, it is not always known which protection measure is fitted. This is the case, for example, with building-site distribution boards or mobile systems with portable electric socket combinations. It is not always possible, however, to replace the upstream residual current circuit-breaker if the operator of the distribution board is not also the owner of the electrical installation they are using.

As soon as there is a possibility of residual currents not equal to the operating frequency or of smooth direct residual currents, the use of an AC-DC sensitive residual current circuit-breaker is essential.

The new AC-DC sensitive Doepke DFS 4 B SK MI residual current circuit-breaker provides a safe solution to this problem: it can be inserted quite safely downstream of a Type A residual current circuit-breaker as its DC triggering threshold is 6 mA. The downstream electrical installation will therefore be isolated from the mains if there is a DC residual current exceeding 6 mA. A dangerous pre-magnetisation of the upstream Type A RCD is therefore averted.

The Doepke DFS 4 B SK MI also combines familiar properties such as the compact housing with a width of four module widths, increased surge current strength for the highest possible level of system availability, and an increased residual current detection range of up to 100 kHz. The devices are available with a rated current of 16 A to 63 A and with a rated residual current of 30 mA. The tripping characteristic curve conforms to the requirements of Type B SK models and protects the circuit-breaker against high leakage currents. ■

Heino Thoben-Mescher
Product Management

STANDARDISATION

Residual current protective devices for additional protection on building and installation sites

DIN EN 61140 (VDE 0140-1) 'Protection against electric shock' is a basic safety standard and is aimed at installers (system designers) and manufacturers of electrical products. The most recent version from July 2014 contains full guidelines and requirements regarding the type of voltage and/or current for frequencies up to 1 kHz.

The type of voltage available must be taken into account in order to ensure that a system is planned effectively and the right protective measures are chosen. Electronic equipment can affect the type of voltage. Currents that flow in normal operation and in the event of a fault (leakage currents, residual currents) also depend on this voltage.

Additional protection (as well as protection in case of direct contact or personal protection) must be included if there is an increased risk. This can be provided by RCDs with $I_{\Delta n} \leq 30$ mA and has proven successful in the event that precautions for basic and/or fault protection fail or if the user is careless. In specific cases, the consequences of double or even multiple faults should be taken into consideration. With regard to the type of trip characteristic chosen (Type A, F, B, B+), RCDs intended for additional protection can only be reliably used when all types of residual current that might arise have been safely covered.

There are minimum requirements when designing precautions for basic and fault protection. Insulating materials such as plastic can be used for these. To ensure robust, safe use of electrical equipment, a manufacturer can, at their discretion, design extremely solid housings that are very difficult to damage.

However, on building and installation sites in particular, the possibility of users being more careless and the extreme demands placed on equipment should be taken into account. For this reason, DIN VDE 0100-704 and DGUV Information 203-006 (previously BGI 608) state that RCDs for additional protection must be used with $I_{\Delta n} \leq 30$mA.

If multiphase equipment with frequency converters are used and the precautions for basic and/or fault protection fail, potentially dangerous electrically conductive parts of this equipment could be exposed and might be touched. Touching them could generate residual currents of ≠ 50 Hz. If one of these dangerous active parts is touched, the additional protection, in this example the residual current protective device, must be effective. With regard to designing effective additional protection with RCDs, all possible types of residual current under all potential fault conditions, even those thought to be impossible, must be taken into consideration. To create additional protection in the above case, only Type B or B+ RCDs are therefore permitted. This even applies if an electrical equipment manufacturer states that their housing is indestructible and declares that despite an integrated frequency converter, Type A RCDs are sufficient for three-phase operation.

Just remember: they thought the Titanic was unsinkable. ■

Günter Grünebast
Head of Standardisation/ Testing/Certification

Employee presentation

Edda Conrads celebrates 25 years

Edda Conrads has worked for Doepke since 8 October 1990. She started by adjusting and checking residual current circuit-breakers. Later on, she worked in the packaging department, amongst others. When packaging changed from using Styropor to cardboard boxes, Mrs Conrads became a packaging artist whose work was delivered around the world.

Mrs Conrads spends most of her spare time with her Golden Retriever, Femy, who is always by her side, whether on weekend caravan trips, on holiday to the Baltic Sea or when geocaching.

▲ *A brilliant team: Edda Conrads with Femy*

Bello's travels

Bello in Bali

When most people think of Bali, they think of miles and miles of amazing beaches. Away from the coast, however, there are many interesting places. Our residual current guard dog, Bello, located just such a place and rested in the arm of a statue. He found it on Nusa Dua, a Balinese holiday paradise in the very south of the island. It's not just the breathtaking landscape and wonderful climate that attract people to Nusa Dua: the ancient Chinese temple Klenteng Cao Eng Bio is also well worth a trip, as is the Pasifika Museum, which displays traditional Asian and Polynesian art. There is also an impressive cliff where the waves are pushed several metres upwards. Bello is now ready for the approaching autumnal weather in East Frisia.

Generations get together at the Doepke summer party

Good food and music in a relaxed atmosphere

▲ *DJ Ernkes in action*

This year's summer party took place on 28 August. Mild temperatures meant the weather was perfect for the Doepke team to have a sociable get-together. Employees' spouses and partners were at the party, too.

There was also a small group of former colleagues who have now retired. This year's summer party was very well-attended, with 75 guests.

After a brief reception, there was an extensive, delicious buffet. A large tent with a bar, run by voluntary bartenders Hildegard and Georg, was large enough for everyone when it turned cooler later in the evening. DJ Helmut Emkes provided flawless musical entertainment and got everyone on the dancefloor.

The summer parties are an ideal opportunity for employees to get to know each other in an informal environment, no matter of age or department.

Everyone was able to simply have a relaxing evening or stay on their feet enjoying the music. It was a very successful party.

▲ *Lively feet on the dance floor: discofox was the dance of the evening*

DATES/NOTES

efa Leipzig
28–30 October
Hall 5, Stand G 23
Leipziger Exhibition Centre

SPS/IPC/Drives, Nuremberg
24-26 November
Hall 4, stand 4-261
Nuremberg Exhibition Centre

TAW Expert Day
1 December
Wuppertal Technical Academy, Hubertusallee 18
Register on www.taw.de

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QUARTERLY QUOTE

Those who deny freedom to others,

deserve it not for themselves.

Abraham Lincoln

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