

DIZ

DOEPKE-INFO-ZEITUNG

FREE CUSTOMER NEWSLETTER BY DOEPKE SCHALTGERÄTE GMBH

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Impressions, facts and figures from Light + Building 2012

Trade fair ends with 196,000 visitors

Around 196,000 visitors attended Light + Building, the world's largest trade fair for light and building technology, which came to a close on 20 April. This is around seven per cent higher than the event two years ago (2010: 183,111 visitors).

came both from within Germany and from abroad. The international numbers increased once again and now lie at around 44 per cent. This means that almost one in every 2 visitors came from abroad.

(source: Messe Frankfurt)

Under the guiding theme of energy efficiency, 2,352 manufacturers from 50 countries presented their innovations and trends for light, electrical engineering, house and building automation, as well as construction software, in the fully-booked exhibition centre. The additional visitors

As a company, we were also very satisfied with the quantity and quality of visitors during Light + Building. At our prestigious and open stand, the "beach corner" in particular invited guests to linger for a while. Many interesting and promising conversations were held here.

Type F residual current circuit breakers were very popular in particular. This RCCB recognises mixed frequencies that occur, as can be the case for example when using equipment with installed single-phase frequency converters (washing machine, rotary hammers etc.), and, in addition to the new conditions, also complies with all requirements for conventional type A RCCBs.

The DRCM and DMRC series products have also been tested intensively on functional boards. These MRCDs must be recommended

in consideration of the Renewable Energies Act [Erneuerbare-Energien-Gesetz - EEG], which requires upgrading of the grid and plant protection.



Johann Meints
Marketing Manager



Upgrading of the required grid and plant protection

Explanations and excerpts from VDE-AR-N 4105:2011-08

The "new" EEG requires upgrading of grid and plant protection. By 31.12.2013 the operator is obliged to upgrade all systems larger than 30 kWp commissioned as of 01.01.2009.

The purpose of grid and plant protection is to disconnect the generating system from the grid in the event of inadmissible voltage and frequency values. In grid and plant protection, a section switch consisting of two electrical switchgears switched in series (protection, circuit breaker) produces a secure disconnection from the grid. Disconnection is carried out when at least one protective function is activated.

The protective functions include:

- » Voltage reduction protection $U < (0.8 U_n, \text{switch-off time} < 100 \text{ ms})$
- » Voltage increase protection $U > (1.1 U_n, \text{switch-off time} < 100 \text{ ms})$
- » Voltage increase protection $U \gg (1.15 U_n, \text{switch-off time} < 100 \text{ ms})$
- » Frequency reduction protection $f < (47.5 \text{ Hz, switch-off time} < 100 \text{ ms})$
- » Frequency increase protection $f < (51.5 \text{ Hz, switch-off time} < 100 \text{ ms})$

As per regulation VDE-AR-N 4105:2011-08, these protective functions do not relate to short-circuit protection, overload protection, protection against electric shock or an all-pole circuit disconnection device for the generating system (e.g. circuit breaker, residual current circuit breaker). The operator (power

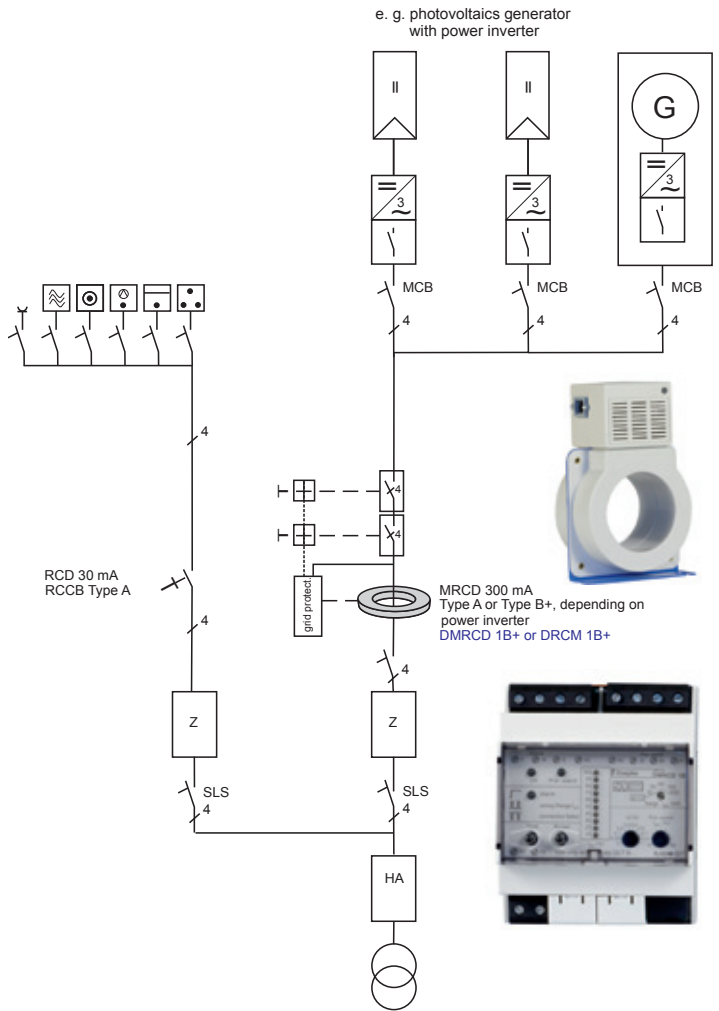
customer) is responsible for this himself (ensuring self-protection).

Talks with electricians and designers show us that often the RCDs that are required for PV systems according to the installation regulations are "forgotten" due to misunderstandings or as a result of economic concerns. In order to counteract this, we recommend that the installation regulations VDE 0100-712, VDE 0100-410 and VDE 0100-530 should be read carefully in addition to the technical guideline VdS 3145 for photovoltaic systems.

According to VdS 3145, it is recommended that RCDs should be used due to fire safety. In other areas, such as agriculture and certain network systems (TT system), the use of RCDs is a necessity. A residual current monitoring unit (RCMU) used by an inverter producer is no replacement for an RCD.

When using RCDs, it is crucial that the right selection is made. Universal RCDs of type B or B+ should be used if it is not possible to rule out that the inverters will generate smooth DC residual currents when there is a fault.

By upgrading the grid and plant protection, many people now have the opportunity to comply with the current regulations and to ensure



Example circuit diagram: Direct supply PV, central grid and plant protection + fire safety MRCD. System > 30kWp, > 125 A with circuit breaker + undervoltage release + pre-alarm

Example: 300 mA fire safety					
Adjusted fire safety	Pre-alarm threshold	Pre-alarm at	Disconnection threshold	Disconnection between	Switch-off time
300 mA	40 % $I_{\Delta N}$	120 mA	80-100 % $I_{\Delta N}$	240-300 mA	< 100 ms

fire safety using a modular residual current device (MRCD 1B+).

In the example circuit diagram, an external residual current converter permanently monitors the feeder line of the PV system and carries out the grid and plant protection together with the basic device DMRC 1B+. In addition, the DMRC 1B+ offers the advantage that there is an alarm when the pre-set pre-alarm threshold is reached. Switching off is only carried out when the residual current reaches a value of between 80-100% of the set value.

Many thanks to the companies ABN Braun AG and Gustav Hensel GmbH & Co. KG for supporting us by providing images.



Structure of grid and plant protection with additional integrated fire safety via DMRC 1B+, DCT 70B+ and DTCC-1 (left: Gustav Hensel GmbH & Co. KG, right: ABN Braun AG)



Michael de Buhr
Product Manager

Snap it up now and get a USB travel adapter

Our offers for the type F residual current circuit breaker and DFA 2-4 remote actuator

Find out about our two promotional sets here - when you buy them you'll also get this USB travel adapter free. The sets can be ordered via your specialist electrical wholesaler.



Promotional set S00024

Doepke
Die Experten für Differenzstromschutztechnik

Der Fernantrieb
switchON

Set S00024:
3 Stk. Fernantrieb DFA 2-4

- » 230 V Versorgungsspannung
- » kein Netzteil mehr notwendig
- » Platzersparnis
- » für RCCB bis 63 A geeignet
- » leicht für die meisten Anwendungen
- » praktische Vorteile
- » schnelle Amortisation
- » Anlagenzustand wird ständig signalisiert
- » Zustand der überwachten Schalter stets im Blick

+ USB-Reise-Adapter gratis

Purchase three DFA 2-4 remote actuators and you'll get a USB travel adapter free

- » 230 V supply voltage
- » No need for mains adapters any more
→ Space-saving
- » Suitable for RCCBs up to 63 A
→ Sufficient for most applications
- » Price benefits
→ Quick amortisation
- » System status constantly signalled
→ Status of the monitored switch can always be seen

Promotional set S00025

Doepke
Die Experten für Differenzstromschutztechnik

Die neue Generation FI-Schalter:
mischfrequenzsensitiv
Typ F

Set S00025:
1 Stk. DFS 2 025-2/0,03-F (zweipolig)
1 Stk. DFS 4 040-4/0,03-F (vierpolig)
1 Stk. DFS 4 063-4/0,03-F (vierpolig)

- » mischfrequenzsensitiv
- » reduzierte Störanfälligkeit
- » gewitterfest
- » kurzzeitverzögert

+ USB-Reise-Adapter gratis

Purchase

1 DFS 2 025-2/0,03-F (2-pole)
1 DFS 4 040-4/0,03-F (4-pole)
1 DFS 4 063-4/0,03-F (4-pole)
and get a USB travel adapter free

- » Sensitive to mixed frequencies
- » Reduced susceptibility to failures
- » Lightning-resistant
- » Short-time delayed

STANDARDISATION



BGI / GUV-I 608 May 2012 issue

Selection and operation of electrical systems and resources on construction and assembly sites

The new issue contains some changes/additions in relation to the use of residual current devices (RCDs). For example, in each building-site distribution board with at least one connection point (socket), there must be a central disconnection device which is freely accessible at any time during operation. Residual current circuit breakers as per DIN EN 61008-1 (e.g. our DFS 2 or DFS 4 series) have disconnection characteristics as per VDE 0100-460 and can be used for this purpose. In the case of temperatures below -5 °C, only equipment suitable for these conditions may be used. Residual current circuit breakers for use in temperatures down to -25 °C are labelled with the "snowflake symbol".

It is generally recommended that RCDs with a rated residual current of $I_{\Delta n} \leq 30 \text{ mA}$ should be used if hand-operated electrical equipment (e.g. drills, hand lamps) is in use.

Multi-phase operated equipment with frequency converters (e.g. cranes, welding converters) may produce smooth DC residual currents and both low and high frequency residual currents. In this case, universal RCDs of type B or B+ must be used. When using single-phase operated equipment with frequency converters (e.g. rotary hammers, vibrating units) it is possible that residual currents with mixed frequencies will emerge, but not smooth DC residual currents. In this case it is recommended that a type F RCD should be used. In all other cases a type A RCD will be sufficient.

Note: In addition to AC and pulse residual currents of mains frequency (50 Hz), type F RCDs also cover AC residual currents with mixed frequencies other than 50 Hz. However, they do not cover smooth DC residual currents and therefore under no circumstances can they be used in the place of a universal RCD of type B or B+.



Günter Grünebast

Head of Standardisation/Testing/Certification

Tanja Heidemann

Marketing



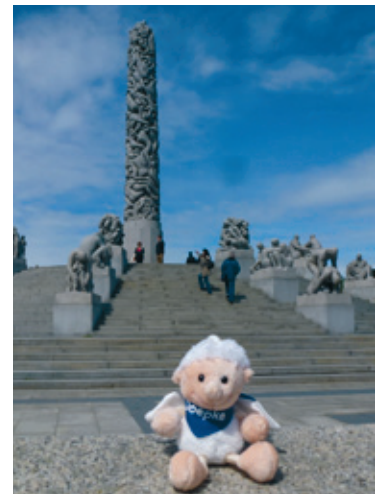
After successfully completing training as a legal and notarial assistant, Tanja Heidemann joined our company in July 2008. She initially worked in actuator production and has been working in the marketing department since July 2011.

Among other things, she is responsible for coordinating and managing all exhibition material such as trade

fair boards, sample cases and sample devices. Her work also involves internal administrative tasks, sending documents and support during events such as trade fairs.

Tanja Heidemann likes spending some of her free time at the gym doing step aerobics or body pump.

The angel out and about...



...this time at the Vigeland sculpture park in Oslo, Norway

We'd love to have a look at your holiday photos of the Doepke guardian angel. Just send an email to: tanja.schueler@doepke.de. We look forward to seeing your guardian angel photos.

New catalogue and prospectus documents for you

Use these documents to find out about our new products

Main catalogue 2012, german
Order no. 5900213
bestellung@doepke.de

Information on residual current circuit breakers, RCCB/circuit breaker combinations, modular residual current devices, differential current monitoring devices, series devices and much more

Innovations prospectus
Order no. 5900189
bestellung@doepke.de

Information on DFS 4 type F, DFS HD, DFL 8 type B 690 V, RCCB/circuit breaker combinations type B, DFA 230 V, DRCM, DMRCB.

Prospectus RCCB type F
Order no. 5900212
bestellung@doepke.de

Information on the new type F residual current circuit breaker

DATES / NOTES

We will be on holiday from 06.08 to 17.08.2012
An emergency service will be available.

Belektro, Berlin
17.10. - 19.10.2012
Hall 1.2, stand 204

6th annual meeting on electrical safety, Düsseldorf

20.11.-21.11.2012
The top subjects:

- » Testing and operating electrical systems as per DIN-VDE regulations and BetrSichV - focus on:
 - PV systems
 - » RCD and frequency converters
- » Hazard risk in the case of low-voltage switchgears
- » Operator's responsibility as per VDE 0105-100
- » The rise of the IT system

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QUARTERLY QUOTE

Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.

Margaret Mead