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DIZ Doepke-Info-Zeitung

The free customer newsletter by Doepke Schaltgeräte GmbH

Doepke

ELEKTRO+ ZVEH

IN THIS ISSUE

Open, bright, friendly: Doepke's stand at Light + Building 2018

More direct, more modern, stronger – Doepke sharpens its brand profile

At Light+Building the specialists in residual current safety technology will sport a stall complete with new branding.

Straight lines, clear structure and focus on what matters – Doepke's stand at Light+Building (Hall 8, C 51) will be a perfect demonstration of the company's new look.

Doepke has always had a close relationship with its customers, and has always been an open, approachable, solution-orientated company – one that treats its customers as equal partners. Doepke is also a byword for huge expertise in everything to do with residual current safety technology. Up to now though, the company has not made its strengths as obvious as it could have. Our new market presence changes all that. Doepke has come up with new, modern, clearly-structured corporate branding. Shop layouts and advertising material have been given a complete overhaul; your copy of DIZ has also taken on a new look.

But our work to sharpen our profile is more than skin-deep. Our internet site has also been completely re-designed over the last few weeks, and in double quick time too. It is now easier to use, structured more clearly and optimised for mobile browsing.

Eleven brand ambassadors from various areas of the business also put in appearances (in every sense of the term) and set out what Doepke stands for in catchy core messages. You can see them on the new internet page, at our stand and on the company's Facebook page. In future Doepke will be investing even more heavily in social media, making it even easier for our partners and customers to contact us. It all starts with Facebook: This is where Doepke keeps its followers informed of the latest news and other matters of interest, as well as providing a platform for exchanging information.

Light+Building will mark the first time the complete brand relaunch has been presented to the public. This is also where our own in-house company film will be premièred. In the space of around four minutes the film makes clear who we are and what the Doepke brand stands for. You will also be able to see the film afterwards on our internet site.

You will find Doepke at Light+Building (18–23 March 2018) in our usual place: Hall 8, Stand C 51. ■

We're all ears!

New at the fair

DFS Audio residual current circuit-breaker in testing – part 1.

What makes the new DFS Audio stand out, and how does it behave when used with high-end Hi-Fi systems? Part 1 of a multi-part report.

When I was at school, my friends and I were interested in high-end audio systems. Of course, our interest was limited by what our pocket money could buy. Way back in the 80s it had already been established that cable connections between individual Hi-Fi units, and even network cables and the quality of the Hi-Fi's power supply, played an important role in the overall listening experience. Being curious technology enthusiasts, we of course carried out umpteen experiments with various cables and other Hi-Fi equipment, which produced some astonishing results. Today, nothing has changed. Admittedly, when I do similar experiments nowadays the engineer in me tells me that, from a technical point of view, there shouldn't really be any difference in the sound. But my ears often tell me otherwise. A human ear with some audiological training is capable of picking up even the slightest difference in sound quality, even if it barely registers on measuring instruments.

On various Hi-Fi forums the issue of power supply to Hi-Fi equipment, and specifically the use of residual current circuit-breakers, appears again and again. And again and again you read that some Hi-Fi enthusiast or other runs their unit without residual current circuit-breakers for sound reasons – an absolute no-no! This is despite the fact that section 411.3.3 of DIN VDE 0100-410 411.3.3 states very clearly that socket outlets of up to 20 A designed for general use by untrained individuals must be protected by IΔn ≤ 30 mA RCDs. That also applies to any socket to which Hi-Fis are connected.

Jet black, pearl white controls, gold-plated terminal connectors: the DFS 4 Audio is instantly recognisable.

When, at the beginning of last year, I self-consciously picked up our DFS 4 residual current circuit-breaker for what seemed like the ten thousandth time, I thought this switch was surely destined to protect circuits for Hi-Fi units. It has huge internal copper conductors, wide main switching contacts with high surface pressure, large connecting terminals and a summation current transformer, with only one primary winding per current path. But it can do more! We have now optimised the switch to ensure it provides a low-impedance, stable power supply for Hi-Fis with minimal interference.

So what is the difference between the new DFS 2/4 F Audio and standard RCCBs? The first difference is visual. When I held the first prototype in my hand I thought 'wow – this switch comes from another planet; black casing with white lettering – that's pretty cool!' And technically? In order to ensure improved electricity flow in high-frequency load current, often found in modern Hi-Fi units with combinatorial circuits, all the internal copper conductors have been silver-plated. Parts of the connecting terminals have been gold-plated, so there is no way oxidation can set in. A bespoke internal summation current transformer ensures that unwelcome parasitical inductive fractions cannot come into play during normal use (i. e. if there is no residual current).

So how does the new DFS 2/4 F Audio sound? Well, let's get one thing clear straight away: It doesn't have a sound – it 'makes' no noise. But during regular use, or when there is no residual current, it behaves almost like the perfect low-impedance electrical conductor and ensures a power supply with no interference, meaning that there is no reason for it to have any negative impact on the Hi-Fi's sound quality. And, in the event of a fault, it protects individuals and valuable Hi-Fi equipment from dangerous residual current. In Type F specification it is immune to transient surge current and, in the event of an error, it reliably picks up AC and pulsating residual current at rated frequency (50 Hz), even where there are different frequency components within the residual current.

More comprehensive tests with my home Hi-Fi system will follow over the coming weeks and more information and technical details will be included in the next issue of DIZ. To begin with the DFS Audio will be available in both two and four-terminal specification, with a rated residual current of 30 mA and for rated currents up to 63 A. ■

Günter Grünebast
Head of
Standardisation and
Certification

Fire safety in the spotlight

Doepke's DAFDD will make its big entrance at Light+Building.

Our DAFDD fire protection switch is the latest offspring of the Doepke family. However, in this case the colloquial shorthand term 'fire protection switch' doesn't do it justice. The DAFDD is in fact three devices in one, which allows it to provide three levels of protection.

As a residual current operated circuit-breaker with integral overcurrent protection (RCBO), it protects individuals from dangerous residual current and installations from short-circuit and overload. It also incorporates arc fault detection functionality (AFD unit), which limits the risk of a fire caused by an arc fault in a permanent installation.

Arc faults as a cause of fire

Arc faults can arise as a result of damage to conducting circuits. Such damage can be caused by normal wear-and-tear to the material or by bending or kinking the cable. The most dangerous aspect of arc faults is the massive heat build up they cause. Over time this stresses and alters the surrounding material. In the worst-case scenario this can lead to fire – often days or even weeks after the fault appears. To prevent precisely this situation, DAFDD reliably recognises series and parallel arc faults and switches off the electric circuit affected.

Reliable protection, easy to use

When tripped, an LED display shows the source of the fault. Information on the cause of the fault is stored and can be reviewed at a later date. The AFD and RCBO units each have separate displays to give a clearer picture of the situation.

Don't give arc faults a chance: get a DAFDD.

DAFDD is available in a range of specifications. You can find more information about the range and other relevant details in our product brochure, which will be available at Light+Building.

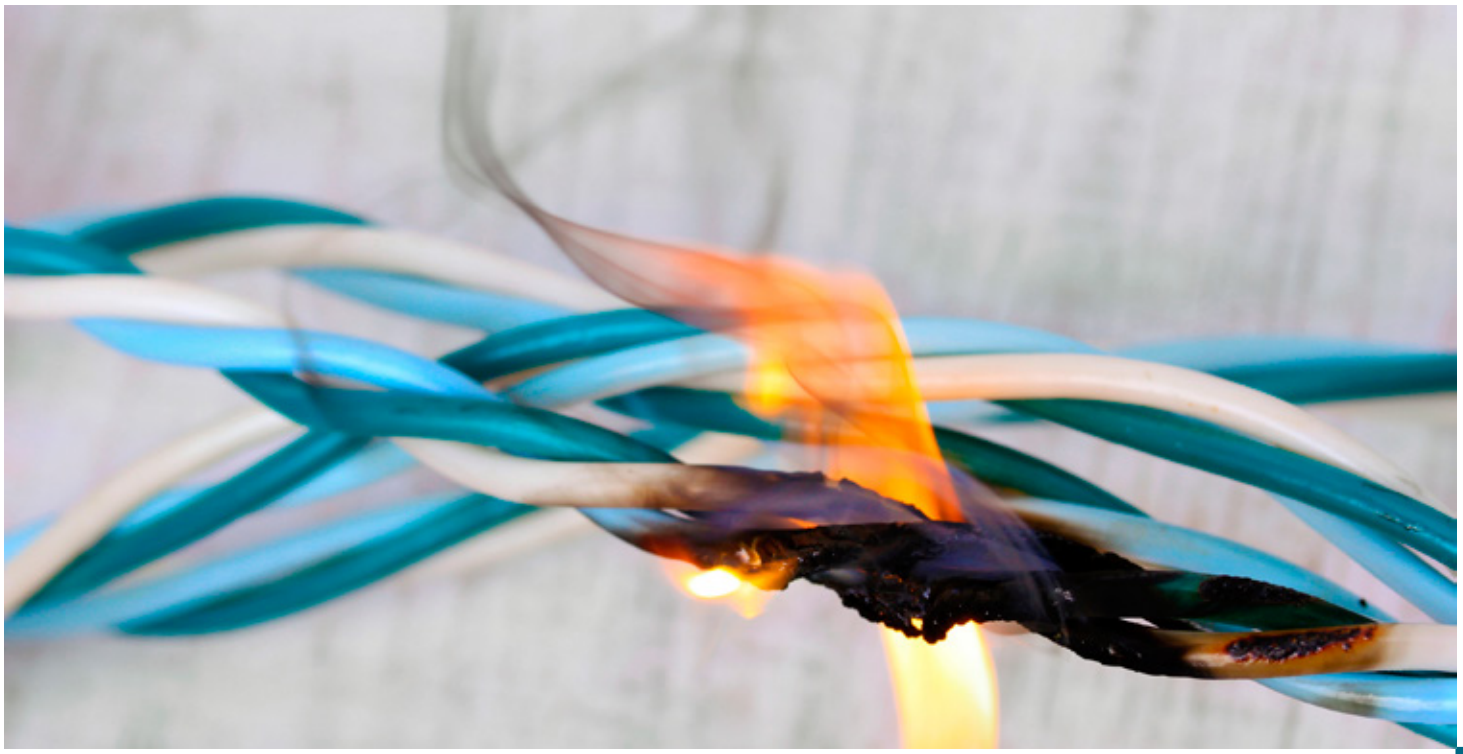
'Red hot' fair activity

DAFDD will attract particular attention at Light+Building, thanks both to the new brochure and to a display on fire protection, of which it will be a key component. It is also the 'star' of a special initiative:

Especially for the fair, Doepke has come up with a fire protection package, which will include a DAFDD and a fire extinguisher.

Why are we providing a fire extinguisher to go with a fire protection switch (after all, the latter ought to eliminate the risk of fire?) Because Doepke thinks things through:

Our DAFDD reliably protects the permanent installation from fire risks caused by arc faults. But our 'all-rounder' can't do anything about forgotten candles, irons, cooking pots or carelessly jettisoned cigarettes. Because we care about safety, we provide double protection. ■



An arc fault can quickly lead to a dangerous fire. A DAFDD protects against this risk.

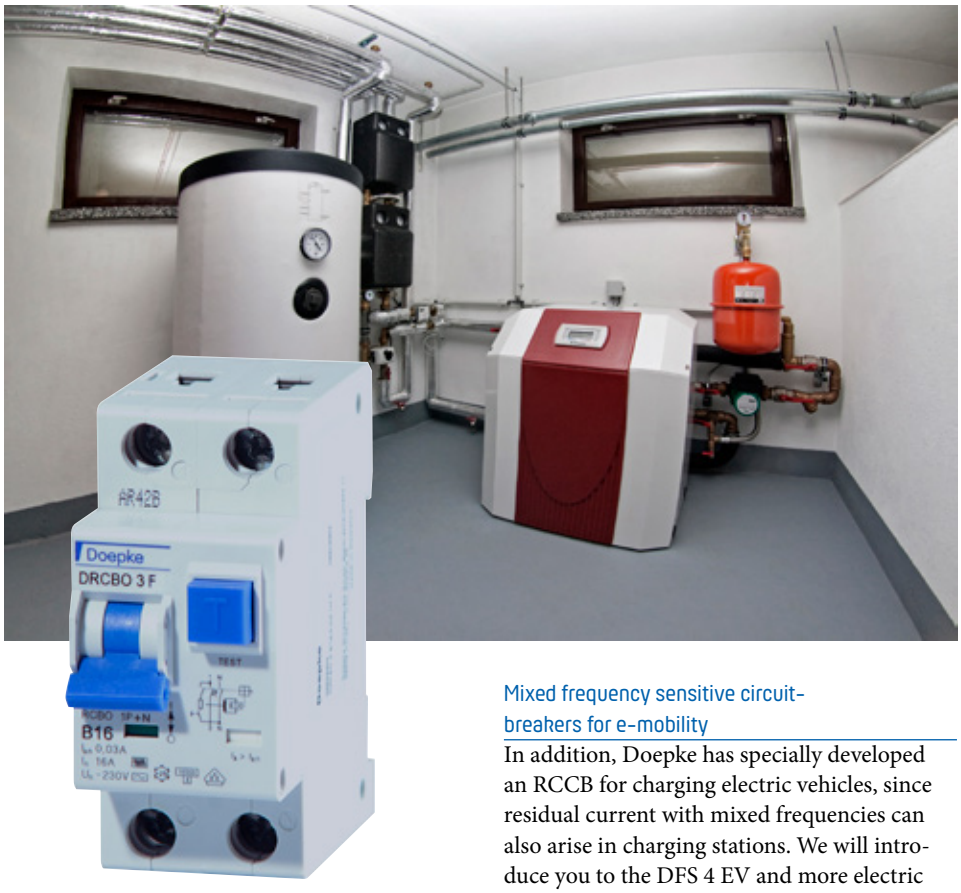
One product, many features

New at the fair

New at Doepke: the mixed frequency sensitive RCBO.

Doepke will soon be introducing its DRCBO 3 Type F. This is the latest addition to the Norden-based firm's range of mixed frequency sensitive protection switches.

The DRCBO 3 F combines a residual current operated circuit-breaker with integral overcurrent protection (RCBO) in a compact package. It is pulsating current, alternating current and mixed frequency sensitive, has a short time delay, and is resistant to lightning and power surges. Using an RCBO means that electrical systems can be divided so that in the event of a fault, only the affected part of the system is switched off. The DRCBO 3 enables increased availability of the unit and a quicker overview in the event of a fault. The separate trip display for the residual current protection switch makes it easier to locate errors. The package is topped off by a protective cover and is easy to assemble and disassemble, even when busbars are fitted.



Mixed frequencies

Many electrical appliances now rely on single-phase frequency converters. Examples include common household appliances such as washing machines, vacuum cleaners and dishwashers. They are also used in tools such as hammer drills, welding equipment and vibrating plates. Due to their specially integrated rectifier circuits or frequency converters, the aforementioned devices, along with LED lighting or heating and warming pumps, can cause strain on the 50 Hz network as well as giving rise to stray and residual current above 50 Hz (mixed frequencies). This can lead to Type A RCCBs failing to trip properly in the event of a fault, or tripping wrongly during normal use due to interference from frequencies other than their rated frequency.

Type F RCCBs take mixed frequencies in their stride. They provide reliable protection from residual current – even at frequencies other than 50 Hz – and will only switch off if there is an actual fault.
A mixed frequency sensitive RCBO, such as Doepke's DRCBO 3 F, is the switch for the modern household.

Mixed frequency sensitive circuit-breakers for e-mobility

In addition, Doepke has specially developed an RCCB for charging electric vehicles, since residual current with mixed frequencies can also arise in charging stations. We will introduce you to the DFS 4 EV and more electric mobility solutions on page 5. ■

Safe charging for electric vehicles

Residual current protection for electromobility

In future renewable energy will play an ever-increasing role as we look to reduce dependency on fossil fuels and meet climate targets. The electrification of road traffic is gradually picking up pace. The number of electric-powered vehicles is rising accordingly, and demand for seamless charging infrastructure is growing.

Doepke is reacting to this trend and has developed further solutions for the safe charging of electric vehicles: New arrivals at Light+Building 2018 include the DFS 4 F EV RCCB and the DRDC 1 transformer.

Protection when charging electric vehicles

According to DIN VDE 0100-722, every connection point must be fitted with its own residual current protective device, with a rated residual current less than or equal to 30 mA. This has to be at least Type A. Measures must also be taken to ensure protection in the case of smooth DC residual currents higher than 6 mA. These can arise during charging of electric vehicles and could 'blind' Type A RCCBs, preventing them from protecting individuals and property.

Doepke already offers a suitable functional and space-saving solution to this problem in the shape of the DFS 4 A EV. This RCCB is sensitive to pulsating and AC residual currents and, thanks to its active additional functionality, it can also protect against failure in the case of smooth DC residual currents higher than 6 mA. This self-protection function also means that upstream residual current protective devices are secured if used with a series connection. This means that no further protection is required against residual current in the charging station.

Doepke's new DFS 4 F EV, to be introduced at the fair, has all the same features and is also sensitive to mixed frequency residual current. The Type F RCCB also offers a higher level of surge and lightning protection. This can make a significant contribution to improving the availability of the charging station, as it can prevent unwanted tripping.

Both RCCBs in the EV range are now also available at rated currents up to 80 A.

Approved standard alternatives: DRDC 1

Thanks to another new product for the fair, the DRDC 1 residual direct current monitoring system, a charging station can also be fitted and operated with a standard Type A RCCB. The DRDC 1 kicks in for smooth direct residual currents higher than 6 mA and causes tripping through the charge controller, for example. The compact package can be placed anywhere within the charging station using the wires for the electric circuit being monitored. Both the power supply and the digital input and output are connected to the periphery of the charging station using the built-in cables.

New at the fair

DRDC 1 is compliant with the draft IEC 62955 product standard, which includes requirements for devices designed to pick up DC residual current to protect Type A or Type F RCDs.

The signs are good

Even simpler and more compact

It is still in development for the time being, but the new DRCBO 4 F EV will soon allow even more space-saving and be even easier to install.

The residual current operated circuit-breaker with integral overcurrent protection (RCBO), with its build width of just 4.5 HP, will be suitable for rated currents up to 32 A. ■

New at the fair

Small but perfectly formed – this new arrival is much more compact

Doepke's DFA 3 introduces a new 'streamlined' remote actuator.

The DFA 3, the latest addition to Doepke's range, only has 1 HP to play with, but still contains all the important features of a remote actuator. It allows RCCBs to be switched on and off at a distance. The remote actuator also uses the semiconductor switch to notify you when the circuit-breaker has tripped or is switched off.

A luminescent LED screen also shows you the current state of the remote actuator and the connected RCCB, on the spot and at a glance. The DFA 3 can be used for RCCBs up to 125 amperes. It is available with or without automatic reclosing. After tripping, the automatic version switches the RCCB on up to three times at 15 second intervals. If the three attempts prove unsuccessful, the remote actuator assumes a fault within the installation and blocks it.

Why use a remote actuator in the first place?

When an RCCB trips, it doesn't always mean there's a fault in the installation. For instance, fluctuations within the network or storms can cause isolated tripping. Therefore, when installations are difficult to get at, or where every standstill costs money, it can be a good idea to equip RCCBs with a remote actuator.

Among other areas, this applies to the agricultural sector, renewable energy and e-mobility, as well as to cooling systems, pumping stations, sewerage works and telecoms installations.

What about Doepke's other solutions?

The DFA 2 range also belongs to our remote actuator family. At 4 HP it may be significantly bigger than the DFA 3, but it offers a wider range of notifications. Depending on the specification, Doepke's DFA 2 remote actuator can tell you whether the RCCB is switched on or off, and whether it is blocked or has been tripped. The DFA 2 can also be tested using remote tripping, so there is no need to press the actual test button. Doepke's '2' range of remote actuators can be used to switch RCCBs up to 63 or 125 amperes, depending on the individual model. ■

Permanent monitoring for installation protection

NEW AT THE FAIR

Doepke's DCTR smart transformer is now available in a range of sizes.

Manufacturing companies, for instance in food processing, the automotive industry and printing, along with utilities such as water and sewerage works, have to leave their electrical installations running around the clock. Disruptions to these installations are expensive and can threaten the safety of basic utilities.

Timely monitoring and assessment of the widest possible range of measurements can lead to cost savings and prevent failures as part of preventive maintenance.

Very high system availability can be achieved thanks to preventive maintenance (also known as monitoring). Monitoring means early recognition of so-called 'creeping faults' in the installation. This entails identifying, recording and analysing residual current. The regulatory standards in this area have recently changed as follows: There is no need to measure the strength of insulation resistance manually (DIN VDE 0105-100) if a circuit is monitored by a residual current monitoring device which meets DIN EN 62020 standards – such as Doepke's DCTR smart transformer.

Our DCTR smart transformers are tailor-made for this task. They monitor residual current and transmit the relevant information using a 4–20 mA interface; the information can then be viewed, recorded and assessed using standard equipment.

If the collected data suggests a fault, the repair can be planned in advance and completed quickly. This improves installation availability and prevents potential additional damage caused by sudden failures.

If the aim of higher installation availability is taken to its logical conclusion, the use of several smaller, de-centralised transformers becomes an attractive option. They allow you to determine not just whether there is a residual current in the system, but exactly where it is.

So what's new?

To meet this requirement, Doepke now offers its DCTR smart transformer, which is now available with a 20 mm internal diameter, in a pulse and AC sensitive Type A specification and as an AC-DC sensitive Type B. However, our well known 35 and 70 mm transformers are getting big reinforcements as well as small ones. The DCTR A is now also available with an internal diameter of 105 millimetres.

Where is development going?

Thanks to the features mentioned above, smart transformers will become ever more widespread. Doepke has recognised this, and is working on a POE transformer. POE stands for Power over Ethernet: This connection allows both data transmission and power supply to be secured without the need for separate components. When integrated into an existing network, the transformer can be read using the Modbus TCP protocol as well as UDP. ■

Half the width – all the protection

NEW AT THE FAIR

The AC-DC sensitive DFS 2 B makes do with just 2 HP.

Doepke is constantly expanding its range in the RCCB sector, and current trends and developments are always a key consideration. Even in a fuse box, the same maxim applies: A suitable space-saving solution is always welcome.

To meet this challenge, Doepke has developed the DFS 2 Type B. It is only 2 HP (36 mm) wide, making it half the size of its predecessor. The two-terminal RCCB is suitable for protecting single-phase circuits. It can be used, for example, in photovoltaic installations or heating pumps, in single-phase frequency converters or for charging electric vehicles.

The DFS 2 Type B is AC-DC sensitive and will pick up smooth and AC residual currents at up to 150 kHz. It is available in two models – B NK (for operating environments with a high risk of fire) and B SK (for high system availability where there is no requirement for fire protection).

Doepke currently offers the DFS 2 B RCCB at rated currents from 16 to 63 amperes and rated residual currents of 30, 100 and 300 milliamperes. Further models will follow. ■

AC-DC sensitive protection in a sleek casing: The DFS 2 B offers proven protection in the smallest possible space.

A new face in our Accounting and Audit Department

Gerd Ewen has been the head of Accounting and Audit at Doepke since 1 October 2016.

He added a degree in business administration to his original training in wholesale and international business.

His last job before joining Doepke was as Head of Central Audit in a large family-owned trading business based in north-western Germany.

Gerd Ewen is 47 and married with two children. A northerner born and bred, he has been living in Upgant-Schott (on the North Sea coast, near the Dutch border) for 18 years.

In his free time, Ewen likes to go on cycling trips throughout the region (what else would you expect of a true East Frisian?). ■

Keeping a tradition alive

'Broom throwing' in perfect conditions

This year's Doepke kloot shooting competition took place amid icy temperatures and glorious sunshine. However, this year the name 'kloot shooting' didn't quite fit, because kloot shooting morphed into broom throwing (both sports are traditional in East Frisia and the Netherlands). Admittedly, the rules are essentially the same: two teams try to throw the object in question as far as possible and then to throw it again from wherever it lands (even if it ends up in a ditch). The winners are the team with the longest throws.

The tradition has been going on for years and is great fun for everyone involved. Movement, hot drinks and delicious snacks provided protection from the cold. And when it was all over, Grünkohl (a typical north-German dish) at the Hafenrestaurant Nessmersiel proved a fine end to the day. ■

Julio on the move

On top in Dubai

Small needle, big skyscraper: Julio's found his way to the Burj Khalifa, the world's tallest building.

The Burj Khalifa is 828 metres (2,716.5 ft) high. On the 124th floor, about 450 metres (1,476 ft) up, there is an outdoor viewing platform, which can be reached in less than a minute thanks to a double-decker lift. Prior to 'take off', Julio took a look at the Dubai Shopping Mall. Naturally enough, with 1,200 shops, it is the world's biggest shopping centre. Over seven days in Dubai, Julio heard the phrase 'the world's biggest' rather a lot. Even the journey to Dubai was made on an Airbus A 380, the world's biggest passenger aircraft. He also saw the Dubai Creek Tower, which is still under construction. By the time it is finished in 2020, it will probably be the world's tallest building. There are a number of estimates for the eventual height of the tower, but it will probably be measured in kilometres.

We would like to thank Frank Körnert from our Bielefeld branch for sending us this picture. ■

DATES/NOTES

Light+Building 2018

18–23 March
Frankfurt am Main, Hall 8, Stand C 51

Sonepar Partnertreff, Bochum

27–28 April 2018

Sonepar Nord-Ost-Partnertreff, Hanover

25–26 May 2018

de-Normentag [Day seminar on standards], Hamburg

6 June 2018

e-masters trendforum

22–24 June 2018

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QUOTE OF THE QUARTER

Discretion is when you only tell one other person.

Gerlinde Nyncke

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