

# Safety on the building site

Type B — retrofitting building-site distribution boards  
with AC-DC sensitive residual current circuit-breakers

- reliable residual current protection without compromise
- type B MI can also be placed downstream of type A or F RCCBs
- also available in HD – heavy duty – version for harsh environmental conditions



# Ensure occupational safety and personal protection

---

*Whether it's a new build or renovation project, electrical safety on a building site is the responsibility of qualified electrical specialists. Multiphase operated or frequency-controlled electronic equipment is often used on building sites, including cranes, pumps, ventilators, stone and wire saws, sand sifters, compactors, agitators etc. Alongside AC residual currents, these can also produce residual currents not equal to 50 Hz and smooth DC residual currents, which cannot be detected by conventional type A residual current devices.*

---

As per device standards, type A RCCBs may only be subjected to a maximum of 6 mA smooth DC residual currents as they are no longer able to maintain their protective function reliably at a higher DC residual current. In the worst-case scenario, an incorrect choice of residual current device could even cause a malfunction. This switch failure will go unnoticed, increasing the risk of an accident caused by residual current.

A type B residual current device is required for electronic consumers where smooth DC residual currents or residual currents with frequencies not equal to 50 Hz occur. However, many mobile building-site distribution boards are still fitted with a type A residual current circuit-breaker. Doepke's type B AC-DC sensitive residual current circuit-breakers enable you to achieve a fully reliable power supply on the building site as these detect smooth DC residual currents and AC residual currents up to 150 kHz with absolute reliability.





## Use electricity safely on building sites.

**The new IEC 60364-7-704 standard** — The IEC 60364-7-704 standard on the construction of low-voltage installations on building sites stipulates that three-phase sockets up to 63 A must always be protected using type B AC-DC sensitive residual current devices.

Sockets with a rated current up to and including 32 A must be protected using a residual current circuit-breaker with a rated residual current of max. 30 mA. Residual current circuit-breakers with a rated residual current of max. 500 mA must be used for circuits with sockets exceeding 32 A.

**The right switch every time** — Use our selection tool at [www.doepke.de](http://www.doepke.de) and find the right switch for your operational purpose. Alternatively, simply give us a call – we would be happy to provide further assistance.

# Special environmental conditions require special protective measures

Installers of electrical systems have to ensure that the equipment used works safely and reliably even in tough environmental conditions, such as extreme temperature fluctuations or under the effects of corrosive gases. Protective equipment must also be protected in these cases. This is often done using special distribution boards with interiors that should provide the most optimal climatic conditions for problem-free, standard-compliant operation of the residual current circuit-breakers.

## No compromises when it comes to functional protection

Residual current circuit-breakers that are already designed for such adverse environmental conditions, such as the HD ('heavy duty') versions from Doepke, are a possible solution here. Due to their special design, our HD circuit-breakers are especially corrosion-resistant even when disconnected from the power supply.

The tripping relay in particular – the core component of the residual current circuit-breaker – is protected and less sensitive to environmental influences, regardless of where it is used. The tripping relay is supported by other high-quality components, such as the latch made from robust stainless steel.



All Doepke RCCBs in the DFS series are available in an HD version.

# Heavy duty for harsh environments



Frost



Heat



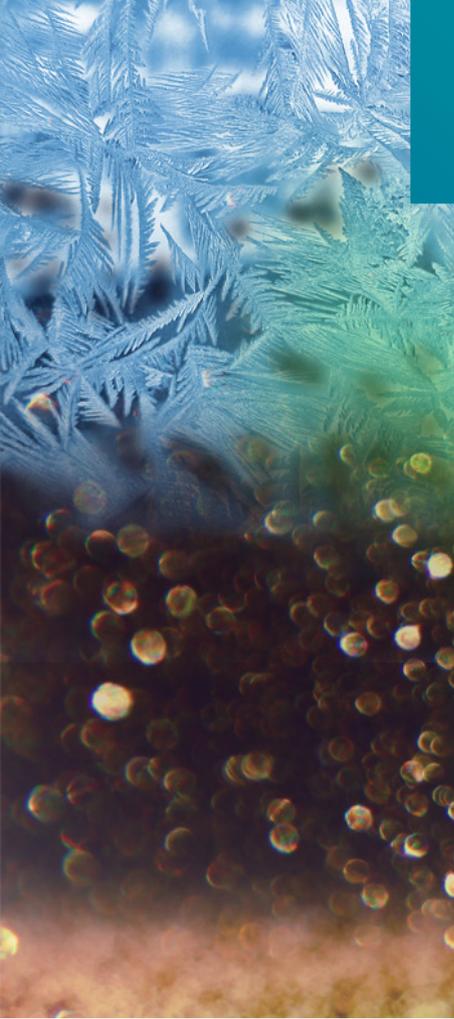
Dust



Moisture



Corrosive gases



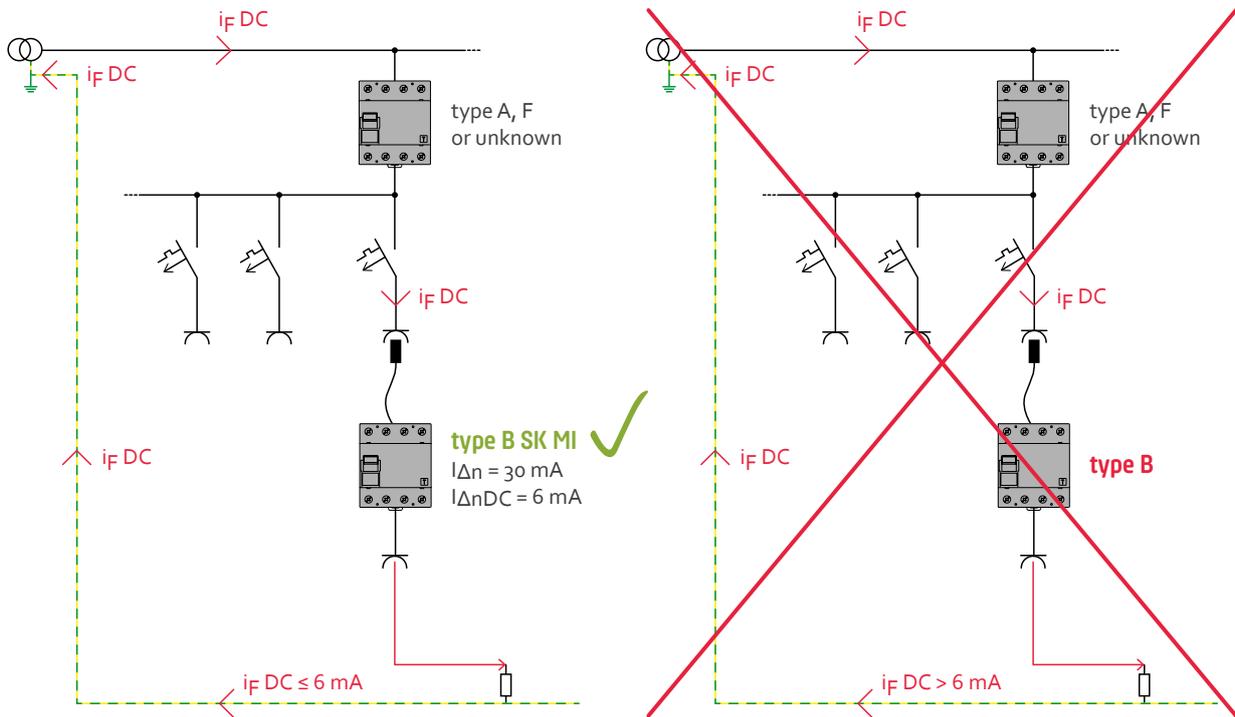
## Wide range of applications

HD residual current circuit-breakers can be used in a wide range of applications that go far beyond the industrial world. Corrosive gases in relevant concentrations can be found in many fields, such as in agriculture, companies that work with solvents (e. g. printing and paint shops) and in swimming pools and spas.

- resistant to aggressive corrosive gases from the air
- resistant to moisture and corrosion
- resistant to excessive heating and low temperatures
- resistant to dust penetration



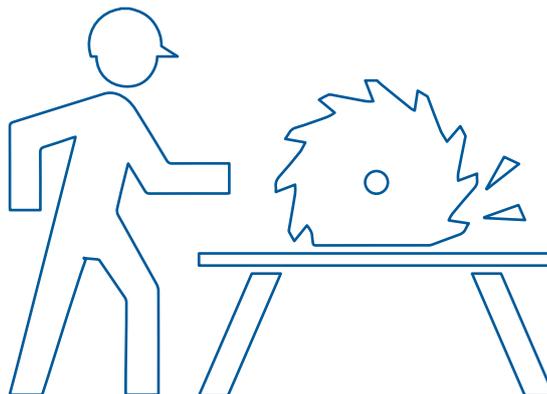
## Series connection of different residual current protection types



Only type B SK MI can be connected downstream of a type A or F.

### MI – for mobile installations

- AC-DC sensitive protection for mobile installations
- trips from a DC residual current of 6 mA
- by doing so, it prevents pre-magnetisation of upstream type A or F residual current circuit-breakers and ensures their protective function works
- the only type B residual current circuit-breaker that can be connected downstream of a type A or F RCCB
- always compatible even if the residual current circuit-breaker in the upstream fixed installation is unknown
- ideal for electrical consumers that can cause DC residual currents and that are used in different locations
- ideal on building sites:  
DFS 4 B SK MI for high system availability





## Mobile full rubber distribution board

### Protection Box

The Doepke Protection Box is the perfect choice to obtain the right residual current protection on building sites. The equipment used on building sites is often controlled by a frequency converter and may generate smooth DC residual currents in the event of a fault. Our Protection Box, which is equipped with an AC-DC sensitive DFS 4 B SK MI, guarantees maximum safety in such scenarios. At the same time, it protects upstream residual current circuit-breakers from blinding. In the HD version, the DFS 4 B SK MI is particularly insensitive to external influences, while also being suitable for a wider range of temperatures.

The Doepke Protection Box with MI is a protection class II portable solid rubber distributor. The black case is virtually unbreakable, non-ageing, acid-resistant and alkali-proof: it's built to last. Depending on the design, the Box has one or two CEE sockets with a rating of 16 or 32 A. The variant that features both connections has a change-over switch so that you can select the active outlet.

# Standards and guidelines

**IEC 60364-7-704** — The requirements of this part apply to installations of electrical systems for the duration of construction and demolition work.

**DIN EN 61008-1 (VDE 0664 part 10)** — This standard describes the general requirements for using residual current circuit-breakers, particularly with regard to temperature, humidity and magnetic fields. It also contains requirements and tests for all types of RCCBs.

**VDE 0100 part 510** — Installers of electrical systems are responsible for ensuring equipment is selected in accordance with the ambient conditions that will occur – with extra protection for harsh environmental conditions.

**PREMIUM** | **MARKEN**  
Partner



## Doepke

Doepke Schaltgeräte GmbH  
Stellmacherstraße 11  
26506 Norden

@ — info@doepke.de  
T — +49 (0) 49 31 18 06-0  
F — +49 (0) 49 31 18 06-101

www — doepke.de