Doepke
e.Guard

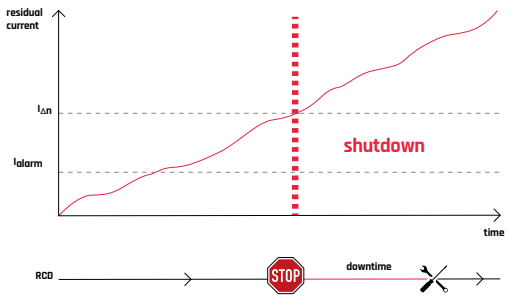
PREVENTIVE SAFETY.

Intelligent residual current monitoring with e.Guard – fire protection, maintenance and safe operation in the logistics and transport sector

The logistics and transport industry is one of the most important branches of the economy in Germany and is constantly growing. In the field of shipping and transportation, in particular, every minute counts – as customers expect their goods to reach their destination as quickly as possible. Logistics companies therefore rely on smooth operations in all areas. Distribution centres and warehouses are central hubs for further goods processing and order picking. Conveyor belts, which handle thousands of packages day and night, must be kept running at all times, if possible. Full availability of the electrical installation is therefore essential for everything to run smoothly. With the continuous residual current monitoring offered by the Doepke e.Guard system, the required level of fire protection can be achieved, all while increasing system availability and eliminating the need for recurring insulation tests.

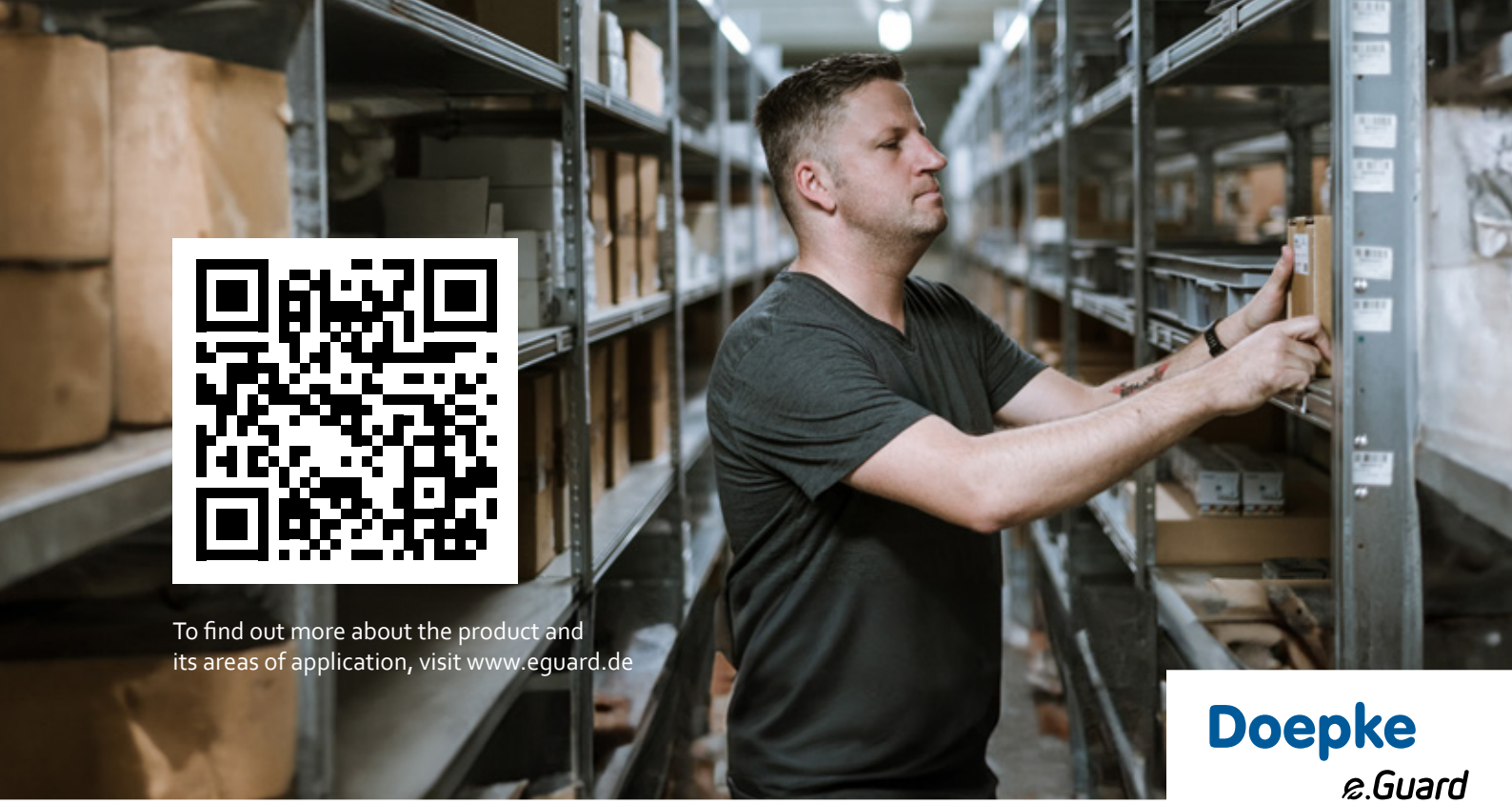
The demands on electrical installations

Electrical installations in the logistics and transport industry are subject to a diverse range of requirements.
System availability and safety are the top priorities. It is because of these safety precautions that installations are shut down reactively in the event of a fault. However, there is no early warning if the condition of the installation starts to deteriorate. In addition, preventive fire protection is essential to many companies due to the types of goods they handle (flammable materials), as well as in large warehouses. The demands placed on electrical installations require safety and protection systems that combine fire protection with preventive maintenance for safe operation and greater availability.



Requirements for protection technology

The protection technology for an electrical installation in the logistics and transport sector must satisfy the requirements of DIN VDE 0100-410 and, if additional fire protection is needed, DIN VDE 0100-420. Further requirements are set out in VDS, DGUV and TRBS regulations. Meanwhile, any conditions stipulated by the property insurer also have to be met.
When the protection strategy involves automatic shutdown of the power supply circuits, overcurrent protection devices are normally used, for example in the form of fuses, to ensure that the electrical energy is cut off rapidly in the event of a short-circuit. For additional protection, such as preventive fire protection, residual current devices (RCDs) are used. These also ensure that the power supply is shut off fast if dangerous currents arise that could cause a fire.
Both types of safety precaution only kick in once the damage has already progressed to an advanced stage. Sections of or even entire installations and buildings are then disconnected from the power supply, causing standstills. Corrective maintenance is then carried out on the affected installations during this period. Here, there is a direct conflict between the goals of safety and system availability, since the shutdown happens without any prior alarm being issued.



To find out more about the product and its areas of application, visit www.eguard.de

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The advantages of e.Guard

e.Guard offers a way to increase the availability of installations while also providing preventive protection against fire. The system consists of a residual current monitor that is compliant with DIN EN 62020 and continuously records the residual currents in the electrical installation. Two configurable, potential-free contacts enable the system to generate a preliminary alarm and a main alarm. This is where e.Guard offers a decisive advantage – any gradual deterioration in the insulation of cables, lines and electronic components will trigger the preliminary alarm, allowing these problems to be identified before it's too late. Until the main alarm activates and the installation is shut down, for example via upstream circuit-breakers, it is possible to carry out preventive maintenance and avoid a system failure further down the line. All the residual currents measured by the individual residual current monitors are saved locally or in the cloud via the connected software on the Windows PC or the e.Guard Gateway. The data can be accessed via an intuitive dashboard, which helps the user to analyse faults and identify the causes. The system has a documentation function that independently generates automatic reports on a regular basis.

The areas of application for e.Guard

The e.Guard system can be used in combination with a shut-off device (e.g. a circuit-breaker with under-voltage release) for preventive fire protection. The system is also suitable for use as a preventive maintenance measure. Thanks to the continuous monitoring function, recurring insulation tests can be dispensed with in accordance with DIN VDE 0105-100 and DGUV Regulation 3. This means that the downtime needed for these tests can be eliminated too. In the field of warehouse and transport logistics, the system is particularly suited for use with the following installations and machines, to name a few examples:

› Conveyor belts
› Charging stations (e.g. for forklift trucks)
› Rail-mounted conveyor systems
› Cranes and lifting equipment

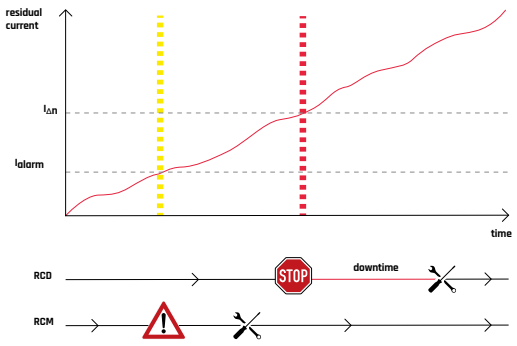

Fig. 2: Shutdown via RCD – alarm via RCM