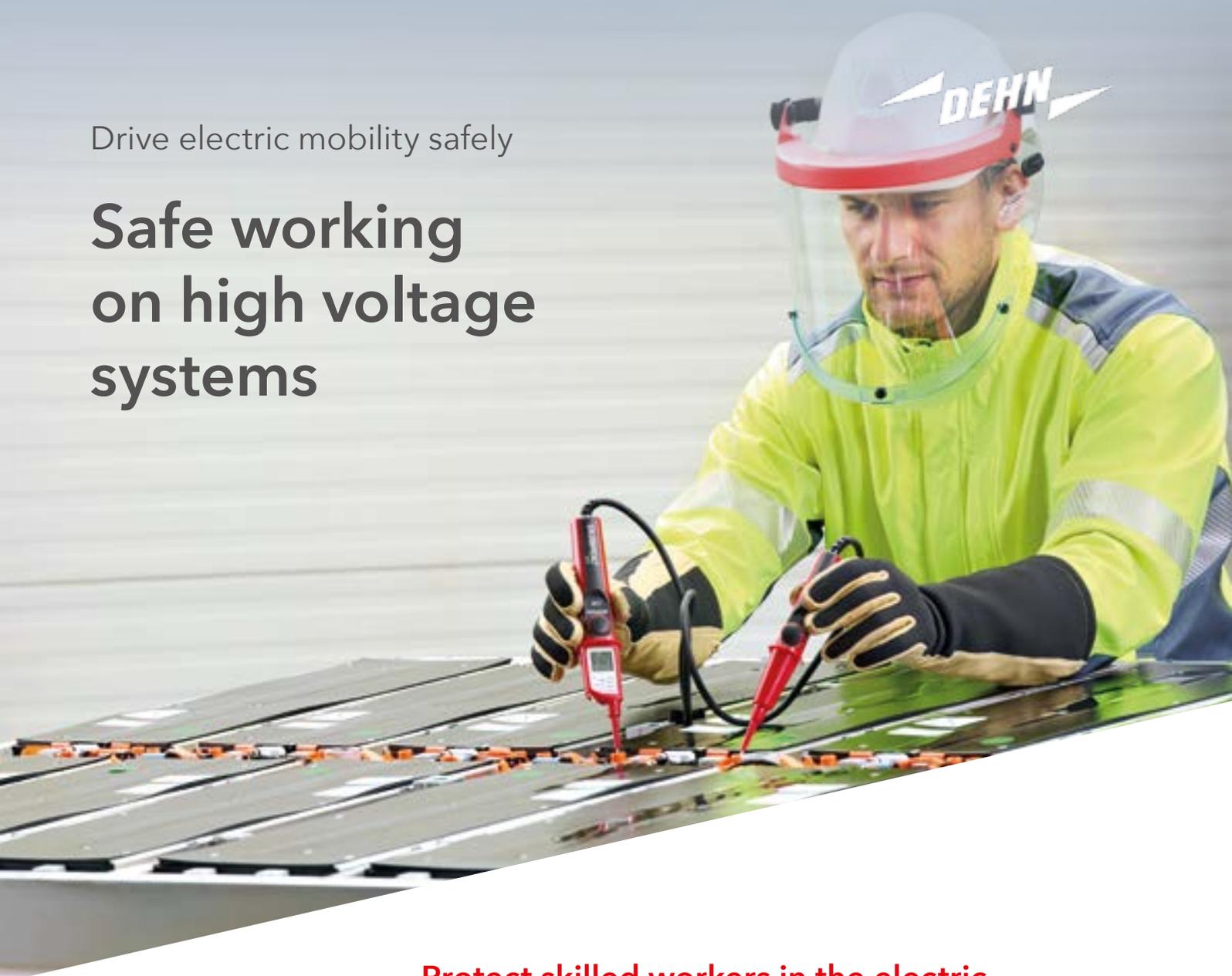


Drive electric mobility safely

# Safe working on high voltage systems



## Protect skilled workers in the electric mobility sector

The term high-voltage (HV) has become established in the field of electric mobility and is defined in accordance with UNECE R100\*. The rms values of the operating voltage are  $> 60 \text{ V}$  and  $\leq 1\,500 \text{ V}$  (direct current) or  $> 30 \text{ V}$  and  $\leq 1\,000 \text{ V}$  (alternating current). This means that additional measures are required when working with high-voltage technology, both in terms of employee training, work organisation and the work and protective equipment to be used.

Electrical hazards demand attention in many areas:



during the manufacture of battery systems or electric vehicles



in car garages



during rescue and recovery



in education and training



when recycling batteries

\*Regulation No. 100 of the United Nations Economic Commission for Europe (UNECE): uniform provisions concerning the approval of vehicles with regard to specific requirements for the electric power train [2015/505]

# Live working

## First steps for working on high-voltage systems

To start with, a risk assessment must be performed. This can be used to define the work procedure, the work order, the assignment of employees according to their qualifications and the necessary work and protective equipment to be provided. DGUV-I 209-093 published by the German Statutory Accident Insurance (DGUV) is helpful here.

## Properly qualified for safe work on high-voltage systems

Additional qualifications are required for working on high-voltage systems, depending on the working environment. Here is an excerpt from DGUV-I 209-093 of the German Statutory Accident Insurance

Training for work on high voltage systems in research, development and manufacture	
3E	"Fachkundige Person" (FHV) for work on live HV components. An FHV is a person who possesses the expertise and specialist knowledge to perform a special task on high voltage systems.
2E	"Fachkundige Person" (FHV) for work on non-live HV components. An FHV is a person who possesses the expertise and specialist knowledge to perform a special task on high voltage systems.
1E	"Fachkundig unterwiesene Person" (FuP), a person who has received instructions by an FHV
E	"Sensibilisierte Person", an employee familiarised with the handling of HV vehicles

Training for work on series production vehicles with high-voltage systems	
3S	"Fachkundige Person" (FHV) for work on live HV components. An FHV is a person who possesses the expertise and specialist knowledge to perform a special task on high voltage systems.
2S	"Fachkundige Person" (FHV) for work on non-live HV components. An FHV is a person who possesses the expertise and specialist knowledge to perform a special task on high voltage systems.
1S	"Fachkundig unterwiesene Person" (FuP), a person who has received instructions by an FHV
S	"Sensibilisierte Person", an employee familiarised with the handling of HV vehicles

## Ideally equipped for safe work on HV systems

Alongside qualifications, DGUV-I 209-093 also describes measures for protection against electric shock and fault arcs. To ensure health and safety when working on HV components, personal protective equipment as well as safety devices and warning signs are required. The equipment in these DEHN portfolios enables you to work safely on high-voltage systems:

### Personal protective equipment



The PPE protects the body, eyes, face, and hands during work on indoor and outdoor electrical installations.

### Safety devices, protective and auxiliary equipment



Practical tools make it safe to work on live parts of an installation.

### Warning and information signs



Barriers and special warning and information signs ensure a safe working environment.

## Safe when it matters most.

DEHN always provides you with fitting solutions and products for safe working on electrical systems based on more than 70 years of experience with electrical applications, work processes and people who work in this specialist field.

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Learn more about  
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