



High Power Charging Standards and Cable Technology

Basic Training

Learn the fundamentals of high power charging and cooled cable technology. The conveyed knowledge will enable you to actively shape these key components of e-mobility. Join the seminar to be in the driver's seat!

WHAT YOU GET:

You'll learn the language, norms, and frameworks needed to:

- » Get an overview of the standards regarding High Power Charging (HPC)
- » Map the normative landscape of HPC
- » Apply the relevant norms correctly
- » Comprehend in depth how cooled cables are constructed and how they function
- » Understand the technical limitations of cooled systems
- » Get an overview of existing cooling techniques and the materials used in cooled cables
- » Follow publications of relevant committees and meetings

HOW:

In our interactive lecture format you will be working through engaging real-life examples together with our renowned expert in the field of High Power Charging. This limited-availability workshop, set in a unique automotive-related venue, is sure to be an invaluable learning experience.

YOUR TRAINER: Marc André Beck



Marc André Beck is the owner of grivix GmbH (Switzerland) and responsible for business development. He used to work as a Market Manager HPC at HUBER+SUHNER AG and to manage the product Cooled Cable to charge EVs at 500 ampère. Before that he was a Product Manager ACS

responsible for the worldwide product portfolio Cable Systems Automotive. At Designwork GmbH he worked as an engineer and responsible developer for batteries and embedded systems.

WHO SHOULD ATTEND:

- » (Electrical) engineers, managers, product designers, entrepreneurs, technology consultants; anyone interested in the field of e-mobility and HPC.
- » As this is an introductory course we welcome participants with no prior experience in the field. Although a background in engineering is beneficial it is not required to understand the topic.



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AGENDA:

Welcome

Introduction in the overview of standards regarding high power charging and how they are related

IEC 62893-4-1/2

- » Why are the cooled cables so thin?
- » How is the minimum size of the cooled cable calculated (I2t)
- » What impact does I2t have on ground cables?
- » Why is it still safe to use thin cables (fault cases)

IEC 62196-3(-1)

- » Y-capacitors and what impact do they have on HPC
- » Contact resistance, coating (impact of cooling)
- » What liquids may be used with a cooled cable
- » How much cooling is required to use cooled cables (radiation, convection)
- » What cooling techniques exist

Limitations

- » What are the technical limitations of cooled charging systems
- » What is the maximum power throughput of cooled cables
- » What is the power / heat (loss) ratio at different current levels

Physical background

Historical background of cooled welding cables

Publishing timeline of IEC 61851-23, IEC 62196-3(-1) and IEC 62893-4-1/2

Relevant committees and meetings

COSTS:

In-house trainings upon request.

Price and booking:

CharIN member: € 975,00 (excl. applicable VAT)

Regular: € 1490,00 (excl. applicable VAT)

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