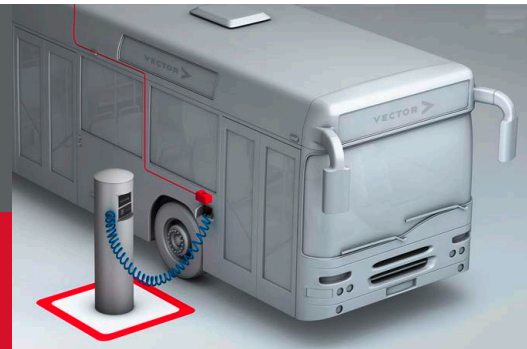


Vector Controller VC-VCCU CCS Interface for Automotive Charging Systems

Case Study Ebusco



The Customer

Ebusco was the first European company that received a European homologation approval for a 100% electric bus. The Dutch company has gained specific experience and knowledge as its electric buses are already being deployed in everyday operation since 2010. Due to their long range, Ebusco's buses can be integrated in existing bus operations, making the company an important player in achieving EU emission targets.

The Challenge

Upgrading to CCS and Combo2 standards

The existing Ebusco bus platform needed an architectural upgrade towards latest industry standards, specifically the connector standards CCS (Combined Charging System) and Combo2, in order to implement direct current depot charging. However, parts available on the market to develop a CCS interface did not fulfill Ebusco's requirements towards reliable compatibility to the sensitive CCS standard. Furthermore, the component needed to be qualified according to automotive standards.

The Solution

Building upon a well-developed foundation

The Vector Controller Vehicle Charge Control Unit (VC-VCCU) is one of the few ECUs on the market to offer an automotive qualified CCS interface. As Ebusco had already gained experience with CCS based devices in the past, the VC-VCCU was the perfect choice for a sophisticated charging interface. The VC-VCCU, as a single device, handles all CCS charging communication including plug detection, system wake up and plug actuator management and provides extra connections for user interface components.

CCS requirements according to ISO/IEC 15118 and DIN SPEC 70121 are challenging because of a wide range of possible use cases. Furthermore, ensuring compatibility with depot chargers of different manufacturers requires extensive testing. By partnering with Vector, Ebusco experienced significantly lower project costs and risk compared to developing a solution on their own.

The VC-VCCU enabled Ebusco to build a well-developed, tested and automotive qualified solution with short development cycles and fast project progress.

The Advantages

VC-VCCU: Generic charging control unit with integrated powerline communication functionality

- > Handles all CCS charging control processes including plug detection, wake up and plug actuator management
- > Offers extra connections for customized use of LEDs, buttons and other user interface components
- > Fast system integration with extensive documentation and CANoe database
- > Perfect compatibility with depot chargers from different brands
- > Small, robust and compact design
- > Qualified for use in automotive vehicles
- > Fulfills DIN SPEC 70121 and ISO/IEC 15118



Vector Controller VC-VCCU for charging communication