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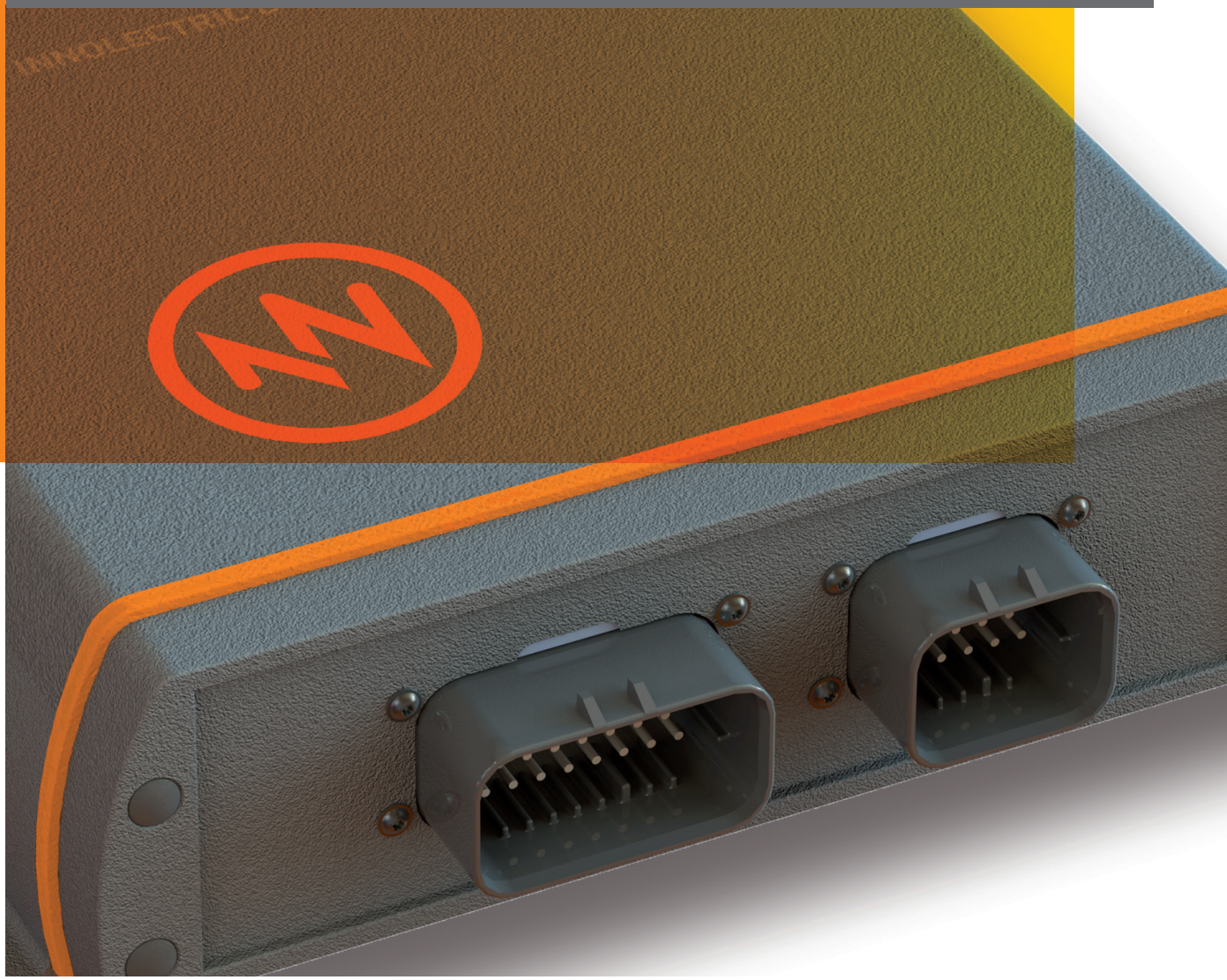
DC Charging Controller

Intelligent „Plug & Play“ communication system



DC Charging Controller

Easy to integrate DC charging communication

HIGHLIGHTS

- Complete charging communication for both - EV and EVSE
- Easy to integrate by simple CAN interface
- Communication regarding DIN SPEC 70121 or ISO 15118 including Value Added Services
- Control of all necessary periphals possible by the D3C incl. DC contactors
- HPC compatible: DC charging process with up to 500 kW and more to minimize charging time

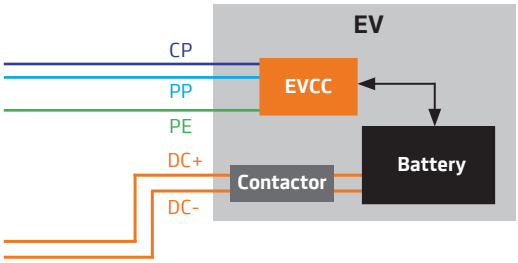
The innolectric solution

DC charging to the latest standards requires fast, precise and intelligent communication. The innolectric DC Charging Controller (D3C) can be used as a central communication unit in both electric vehicles and charging infrastructure. The component takes account of the pertinent norms and standards ISO 15118 and DIN SPEC 70121 for charging communication, thereby reliably providing interoperability with other charging technology components.

Application in heavy and compact duty

Heavy E-vehicles

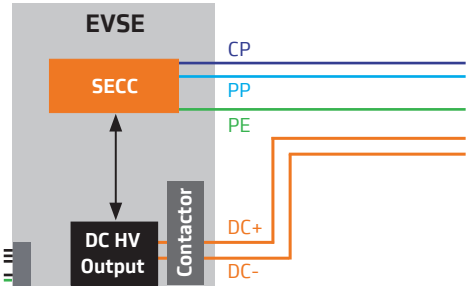
Compact and light working machinery



D3C functionality as EVCC unit

The DC Charging Controller is especially suitable for large vehicles and heavy machinery with particularly high battery capacity as an EVCC (Electric vehicle charging communication) unit. It can also be used in compact work vehicles with limited installation space that operate in a controlled infrastructure.

Application in DC charging stations



DC charging stations

D3C functionality as SECC unit

On top of that, the DC Charging Controller can be used as SECC (Supply equipment charging communication) unit in DC charging stations. The D3C is particularly well suited for private-sector use, which means for DC charging of commercial vehicle fleets with simple, low-cost charging infrastructure.

Simple integration of the „Plug & Play“ system solution

The D3C is an intelligent stand-alone charge controller that manages the communication for a seamless DC charging process with up to 500 kW and more. It is suitable for heavy and compact electrical vehicles as well as for DC charging stations, thanks to its 12 V PWM-module. During the development of the D3C, the focus has been on simple „Plug & Play“ system integration for the customer. In addition, the communication controller's intelligence in the application makes it a total solution instead of just a simple vehicle component.

The D3C can be acquired as a self-contained intelligent communication module but also as part of the innolectric On-Board Charger (OBC). The OBC is an integrated overall solution for AC and DC charging that includes all functionalities of the D3C. The OBC can be used in the customer application without any additional device.

Technical Data of the DC Charging Controller

Product name	innolectric DC Charging Controller	
Functionality as communication unit	EVCC	SECC
DC charging communication	PLC (DIN SPEC 70121, ISO 15118)	
Interfaces	1x CAN J1939	CAN, Further options
Degree of Protection	IP6K9K	up to IPXX
Weight	0,5 kg	0,5 kg
Operating Temperature	-40 to 85 °C	

Minimal adjustments due to series production are possible.

State-of-the-art technology

Updateable software

Both charging communication and charging standards as well as customer needs can evolve over time. Thanks to „over-the-air“ updates via EV-CAN, it is always possible to keep the D3C up to date with the latest standards and requirements. All communication protocols are continuously updated by innolectric and therefore also take account of future updates to the norm. Updating to the latest version is possible at any time with the D3C. The innolectric firmware updater was developed especially for an easy to implement update process.

Value added services

Depending on the request and application, the respective additional function can be integrated after consultation with innolectric. Here, the D3C offers a communication bridge whose functionalities can be implemented by innolectric as part of a development effort. The Value Added Services brought in via software include for example:

- Intelligent payment options - „Plug & Charge“
- Defined charging profiles
- Smart charging | Load balancing
- Reservation of charging points
- Regenerative capability (V2G)

Customer benefits

The innolectric D3C has numerous features that suit the customers' requirements:

- Supports DC charging control up to 500 kW and more
- Handles the complete charging communication according IEC 61851 / DIN SPEC 70121. Optional selection between a PWM and a combined PWM / PLC communication.
- Is developed in extracts following to the standards LV123 / LV124
- Complete interoperability with all standard compliant EVSEs and EVs.
- Offers optional update possibilities like Value Added Services (VAS) and Plug and Charge (PnC) to start the charging process immediately without user interaction.

Cutting-edge solutions

innolectric is driving forward electromobility and develops component solutions for the electrified powertrain and the associated charging process as well as energy storages. We offer efficient charging technology for on-board and offboard applications. It can be used in cars, trucks, any other commercial or construction vehicles and also in charging stations.

If more complex requirements are requested by our customers, we also offer the innolectric On-Board Charger (OBC) in our portfolio in addition to the D3C. With the OBC, an integrated charging solution is possible that features all the functionalities of the D3C. Besides the DC charging standard PLC (DIN SPEC 70121 and ISO 15118) the OBC supports the usual AC charging function via PWM communication up to 22 kW. Users of the innolectric On-Board Charger benefit from a turnkey solution that only requires one integration of the system application on the user side because power electronics and charging communication fit perfectly together.

innolectric AG
Universitätsstraße 136
44799 Bochum
Germany

+49 234 60 14 36 70
sales@innolectric.ag
www.innolectric.ag