



# DC Bus Controller

The DC Bus Controller enables the traditional PDU to become an intelligent component with current and temperature sensing, precharge and discharge functionality and industry standard diagnostic services. The Controller is highly flexible to be adjusted to the different requirements. The integrated software additionally enables advanced diagnostics and analysis, such as dynamic load calculation for fuses or predictive maintenance models.

# Description

The DC Bus Controller is our Electronic Control Unit, dedicated for different use cases in electric vehicles.

Its flexible architecture allows the use in a wide palette of EV components such as Power Distribution Units, DC Charge Interfaces or Battery Disconnect Units. Thanks to the flexible internal interfaces the functionality needed in each different application can be implemented with Extension Boards.

A-Samples available. B-Samples and custom features are available on request.

#### Features

#### Norms and Regulations

- AECQ-100 automotive compliant
- ISO 6469-3:2018 compliant
- ASIL Ready, ISO 26262 on request
- ECE R10 compliant on request

#### **Technical Specification**

- Dimensions. 123.86mm / 105.25mm / 11mm
- Wide range supply (8-36V)
- Wakeup-Time <100ms
- Secured CAN2.0B interface, 500 kBaud (adjustable)
- Interlock Circuit according to LV123
- 3 Contactor Driver with Feedback Input and integrated software switch counter
- 6 Analog Sensor Inputs (I, U, R) designed for the most common current and temperature sensors
- Daisy Chain / Stackable of multiple DC Bus Controllers
- Multiple Extensions available: HV Sensor Module, Current Sensor Module, Inlet Control Module
- Versatile extension Interface (Internal CAN / LIN / SPI / UART) for customizable applications and any kind of 3rd party sensors and actors.
- UDS / J1939 diagnostic functionality



# **Order Information**

## DCBC-O-A01





## **Interface Description**

Name	Description	Physical Interface
VehicleCom	Main Connector to the Vehicle System	K15, Interlock In / Out, CAN
		Connector: Molex 560020-1020
Supply	Board Input Supply	К30, К31
		Connector: JAE MX81A004NF1R300
IO-Drive	Primary Function: 3x Switch Driver	K31, Relay+, Relay Feedback
	Secondary Function: GPIO	Connector: JAE MX81A004NF1R300
Supply Out	Switched Supply max 10A	K30S, K31
		Connector: JAE MX81A002NF1R470
Sensor In	6x Sensor Input configurable	+5V, Signal In, K30S
	(420mA, 05V, 0.110kΩ	Connector: Molex 502352-0301
Aux	Flexible Extensions for additional	KL31, +5V, SPI, LIN, GPIO, UART
	Functionality i.e. Inlet Control Unit	Connector: Molex 560020-1020
Extension In	Extension to add multiple DC Controller	K30S, K31, CAN, Address Line
	Boards in series or 3rd party components	Connector: Molex 502352-0601
Extension Out	Extension to add multiple DC Controller	K30S, K31, CAN, Address Line
	Boards in series or 3rd party components	Connector: Molex 502352-0601

## Extensions

The functions of DC Bus Controller can be easily extended through the adjust to your products need. The DC Controller Board can either used in parallel through the Extension Interface, or the additional Modules can be connected through the Aux connector. Multiple Boards can be connected as a Daisy Chain.

- HV Board: 2x 1000V Voltage Measurement, 2x Temperature Measurement, additional relay for precharge
- Current: Current measurements according to customer requirements
- Inlet: Inlet Controller for DC Charge functionality, Including Communication, LED Driver, Lock Driver, CP & PP



Multiple DC Bus Controller in Daisy Chain Configuration



Technical Drawing



DC Bus Controller with different Extensions