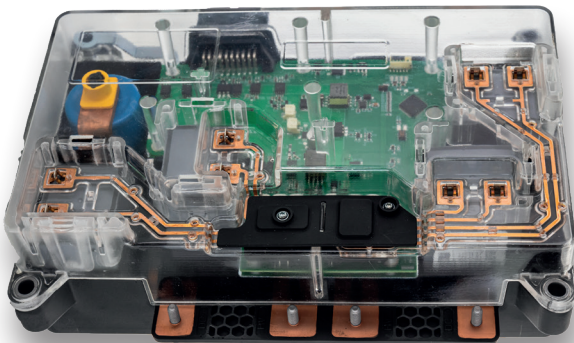


IFLEX BOX



E-MOBILITY

Optimization of electric mobility



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Application description

The IFlexBox is a sub-unit inside / outside the battery pack in high voltage electrical or hybrid systems.

It can be installed in the battery housing either in the "chocolate bar" in the cell pack or on top of the battery housing (so called "penthouse" location).

This sub-unit is responsible for monitoring, activating, and deactivating the high voltage battery system.

It (dis-)connects the battery to the vehicle high voltage powertrain and charging systems. It also performs overcurrent / short circuits detection enabling related safety interruptions.

Key Facts

- Space saving
- Easy installation and integration
- Good heat dissipation
- Good electrical insulation

Benefits

- Localized HV interfaces or Plug-type HV-connectors
- Small volume design:
 - Weight : 5 kg
 - Volume : 6 litres
- Different contactor and switch off components:
 - Main contactors / Contactors for DC charging
 - Pre-charge circuit
 - HV fuse
 - Pyro Fuse or Pyro Switch
- Customization to various battery designs
- Voltage, current and temperature measurements

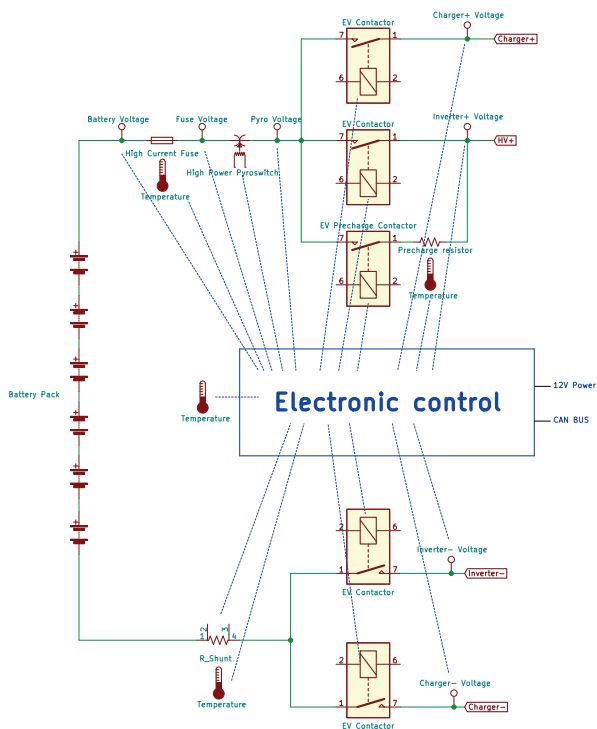
Technical information / Performance parameters

	Minimum	Typ.	Maximum	Units	
Operating Temperature	-40		85	°C	
Battery Voltage		450		V	
Unlimited Current			250	A	400A / 2 min – 800A / 30s – 1000A / 10s
Max Contactor Breaking Current			2000	A	@ 450V
Pyro Separation Capacity			20	kA	@500V / 20μH
Max Fuse I ² t Clearing		100		kA ² s	@ 6kA
Charging Power			120	kW	
Insulation		50		Mohms	@ 450V

Options

- 1000 V battery designs
- Max unlimited current : 500A
- DC Fast Charging Power : up to 350 kW
- Redundant Current Sensor
- Integration of electronics
- Contactor drive signal optimization
- Additional auxiliary secondary protection
- Die cast housing for top mounting onto the battery housing

Power Schematics & BOM



Electronic Control Options

- Local control of main and DC charge contactors (digital or PWM)
- High-voltage Voltage, current, temperature measurements
- High-voltage Voltage, current, temperature isolation interface
- Overvoltage / Overcurrent / Overtemperature diagnostics
- Active pre-charge
- HS CAN bus interface to BMS
- Local interface with 12V LV filtered power-supply
- Isolation monitoring
- Interlock monitoring
- Crash signal monitoring for Pyro component drive
- Local interfaces and components to improve redundancy and safety coverage