

# AVL DiTEST rightCHARGE 11kW

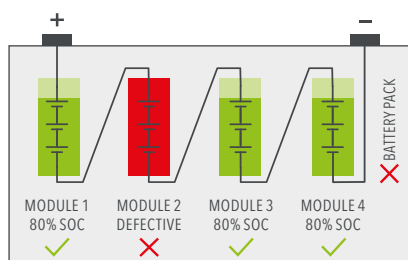


Your traction battery is the most valuable part of the electric vehicle. In order to extend the life of the battery as long as possible, we have developed the AVL DiTEST rightCHARGE 11 kW for you. The rightCHARGE 11kW is our latest battery module conditioning system. It allows you a fast and safe repair of different types of batteries: When an individual module in a traction battery gets defective, you need to replace it. After identifying the defective battery module, you must remove it from the battery pack (STEP 1).

In the next step, you have to adapt its SoC (State of Charge) according to the SoC of other modules in the battery (STEP 2). Otherwise, the BMS (Battery Management System) will not activate the repaired battery. Hence, the conditioning of new battery modules is crucial, to successfully install the new module into the battery pack and finalize the repair process (STEP 3).

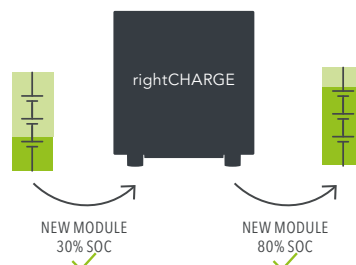
## Step 1

Identify the defective battery module using AVL DiTEST diagnostic tools and remove it from the battery pack.



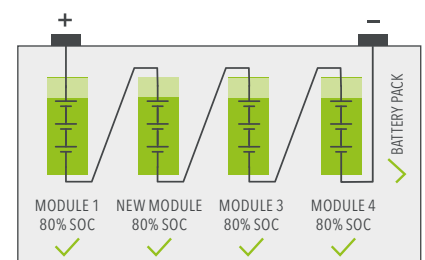
## Step 2

Get a new battery module (for example, from the warehouse) and condition (charge or discharge) it to same SoC as the other modules.



## Step 3

Install the new, conditioned module into the battery pack. Due to a uniform SoC, the new module is activated by the BMS and the repair process can be finalized.



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## FEATURES

- › Safe operation based on a high-precision monitoring:
  - Intelligent contact detection
  - Reverse polarity protection
  - High-precision, permanent monitoring of cell voltages, temperature, and current
  - Safety indication based on module-dependent limits
- › Guided software workflow and automated protocol function
- › Adjustable target voltage
- › Communication with the battery module via 24 analog channels (freely expandable via accessory box) or digital protocols (CAN, CAN-FD, SPI, and ISO SPI)
- › Measuring the residual capacity of battery modules via coulomb counting
- › Operated via Windows interface or device API
- › Allows disconnecting the PC or tablet while conditioning battery modules
- › Balancing of cell voltages (analog or digital)

## USPs

### High power and max. current (max. 11 kW & 80 A)

The rightCHARGE 11 kW allows conditioning battery modules in a short period of time. For example, a 36s27p-module could be charged from 25% to 80% SoC in about 40 minutes.

### Broad voltage spectrum (2–430 V<sub>DC</sub>)

The rightCHARGE 11kW allows charging modules from 3 – 400 V<sub>DC</sub> and discharging modules from 2 – 430 V<sub>DC</sub>. Based on its significant voltage spectrum, the rightCHARGE 11 kW is able to condition different types of battery modules, either from BEVs or PHEVs. Combined with AVL DiTEST's HV SAT, it could even be used to charge or discharge battery packs.

### Energy recovery via bi-directional power electronics

Besides discharging energy from battery modules via heat dissipation, the rightCHARGE 11 kW allows discharging via energy recovery: Energy, discharged from the battery module, is fed back to the power grid (if enabled by local grid specifications). Thereby, you can decrease your net energy demand and save energy costs. Furthermore, discharging battery modules is much faster compared to dissipation.

## TECHNICAL SPECIFICATIONS

Output (on module side)	Charging	Discharging via heat dissipation	Discharging via energy recovery
Voltage	3–400 V <sub>DC</sub>	2–430 V <sub>DC</sub>	20–400 V <sub>DC</sub>
Max. current	80 A	50 A	50 A
Input (on power grid side)			
Voltage	200–480 V <sub>AC</sub> , 47–63 Hz		
Max. current	16 A		
Max. power	11 kW	2 kW	11 kW

## CONNECTIONS

USB cable	USB 2.0 A to USB 2.0 B rugged
Country-specific power cables	<ul style="list-style-type: none"> <li>› CEE 400 V<sub>AC</sub> 16 A, CEE 230 V<sub>AC</sub> 16 A, or CEE 230 V<sub>AC</sub> 10 A (e.g., EU)</li> <li>› CEE 400 V<sub>AC</sub> 32 A (e.g., China)</li> <li>› NEMA 14–50 (e.g., USA, Canada)</li> <li>› NEMA 10–50 (e.g., Australia)</li> <li>› American Denki 3-phase 60 A (e.g., Japan)</li> <li>› Open end (without connector)</li> </ul>