

Tuesday, April 25, 2023

- ▶ 03:00 pm CEST | EMEA session
- ▶ 02:00 pm EDT | Americas session



Webinar



Active Discharge and Pre-charge of EV High Voltage Power Bus

Active **Discharge** of EV High Voltage Power Bus

1

Why do we need to discharge HV Bus ?

2

How can we discharge HV bus ?

3

Benchmarking Discharge Switch

4

Why using THYRISTOR ?

5

THYRISTOR Product range

6

Reference Design for HV Bus discharge

7

How to diagnose the discharge function ?

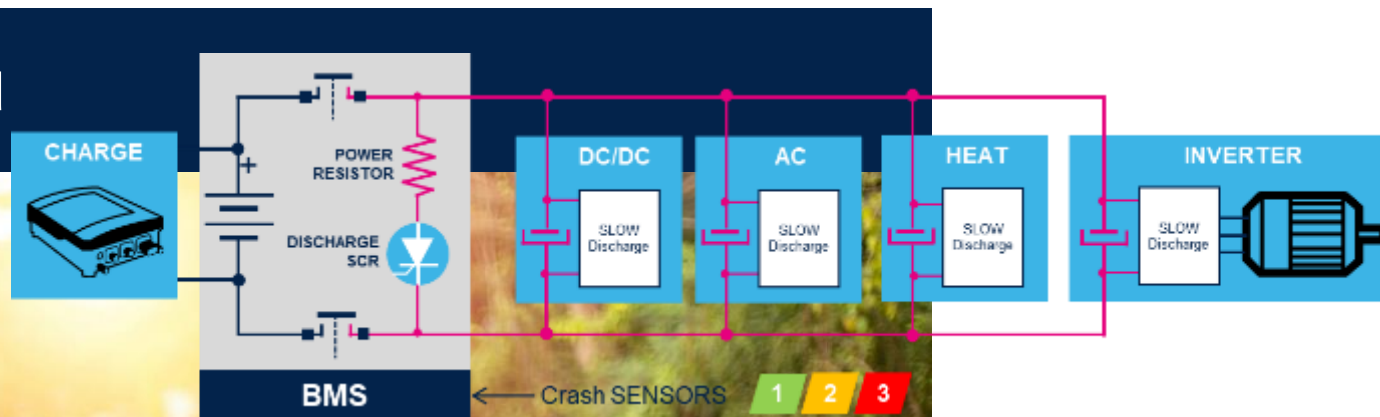
8

Live demo of Diagnostic and HV bus Discharge



BMS Active Discharge with THYRISTOR

Fast Discharge prevents Fire hazard



In critical events the HV system shall be actively discharged to prevent short circuit fire and electrical shocks by residual voltage.

The battery voltage is disconnected by a separate disconnection unit.

All DC Capacitors are discharged in power resistors with minimal value in order to minimize the discharge time

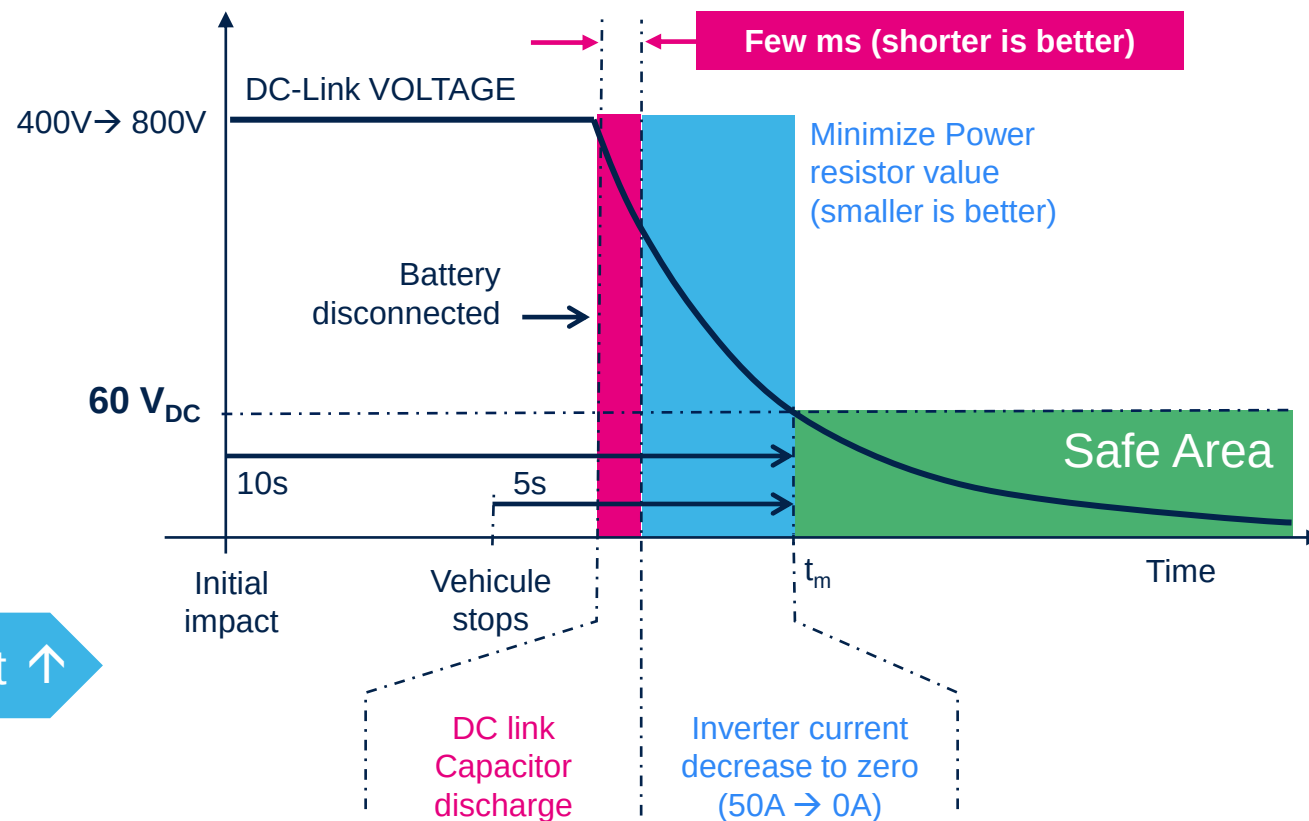
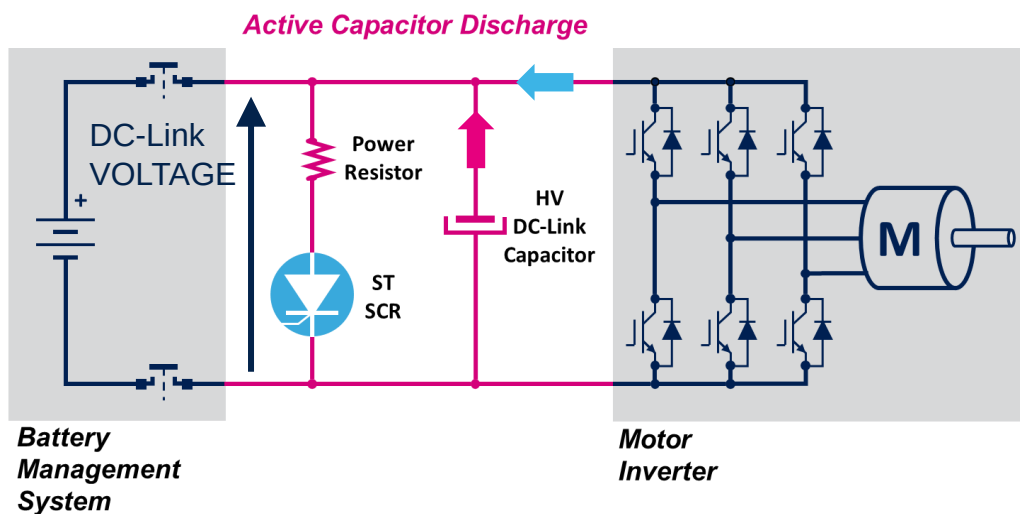
Safety Requirement in [ISO-6469](#) specify discharge in less than 10s but SCR Discharge in few milliseconds will limit the risk of Fire.



5.2.2 Voltage limit

The voltages V_b , V_1 , and V_2 (see [Figure 1](#)) of the voltage class B electric circuits shall be equal to or less than 30 V a.c. (rms) or 60 V d.c. at a point in time t_m which is specified as

- either 10 s after the initial impact, if the vehicle comes to rest within 5 s after the initial impact, or
- 5 s after the vehicle comes to rest, if the vehicle does not come to rest within 5 s after the initial impact.



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