

„Automotive source quality“

Spitzenberger & Spies – automotive supply simulation with optimum performance

Rise- and fall-time are one of the main quality points when looking at the performance of supply simulation systems. Comparing different technical solution ways a big quality difference is carried out.

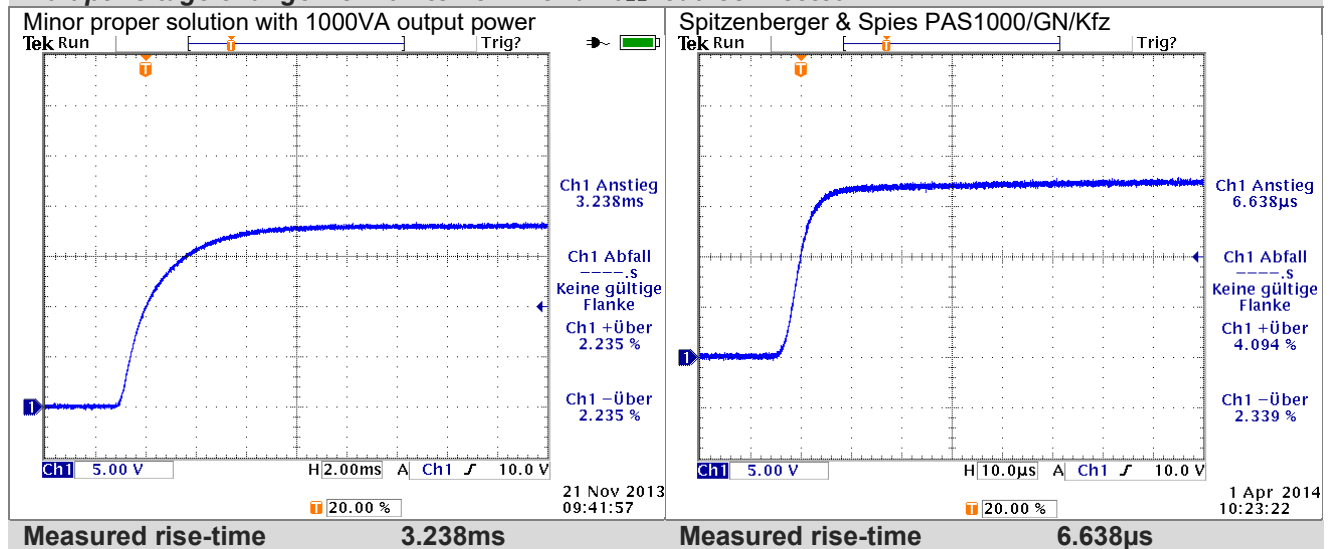
The following measurements compare the performance of simple solutions with the performance of the Spitzenberger & Spies power sources. The upcoming result is, that minor proper solutions have an extremely reduced rise- and fall-time speed in comparison to the Spitzenberger & Spies system – **500 times slower**.

Looking at the measurement values, the PAS/GN/Kfz has a rise-/fall-time around 5-10 μs , the minor solution is around 2.6-3.3 ms

The relating standards:
ISO 7637
ISO 16750-2
ISO 21848
BMW GS 95002
and many manufacturer
specific standards

Comparison measurement 1:

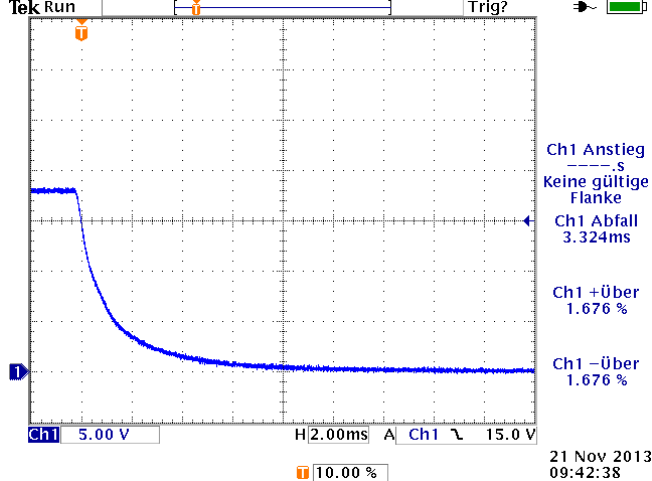
Abrupt voltage change from 0V to 18V with a 10 Ω load connected



Comparison measurement 2:

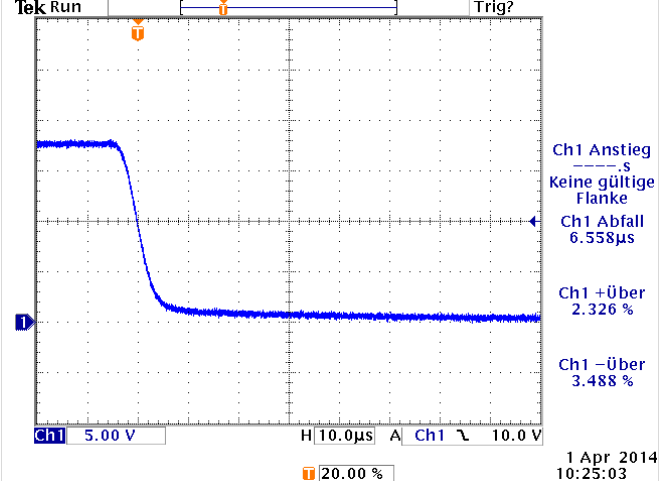
Abrupt voltage change from 18V to 0V with a 10Ω load connected

Minor proper solution with 1000VA output power



Measured fall-time 3.324ms

Spitzenberger & Spies PAS1000/GN/Kfz

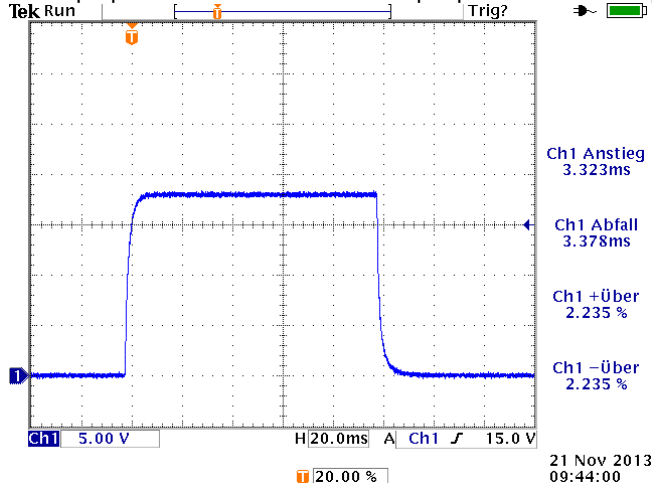


Measured fall-time 6.558μs

Comparison measurement 3:

Abrupt voltage change from 0V to 18V and back to 0V with a 10Ω load connected at a time resolution of 20ms/DIV

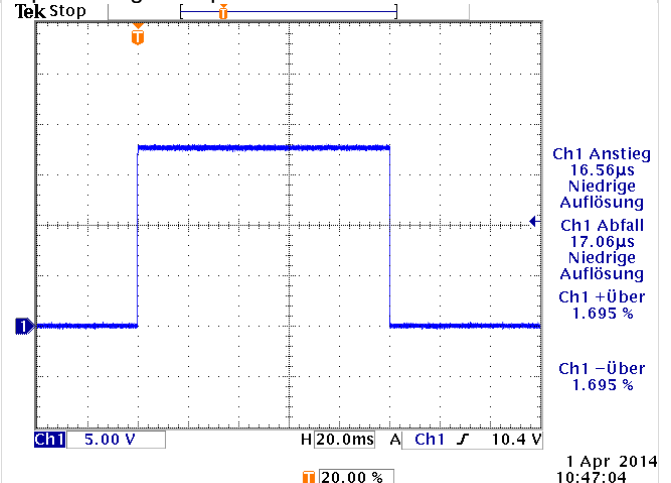
Minor proper solution with 1000VA output power



Measured rise-time 3.323ms

Measured fall-time 3.378ms

Spitzenberger & Spies PAS1000/GN/Kfz



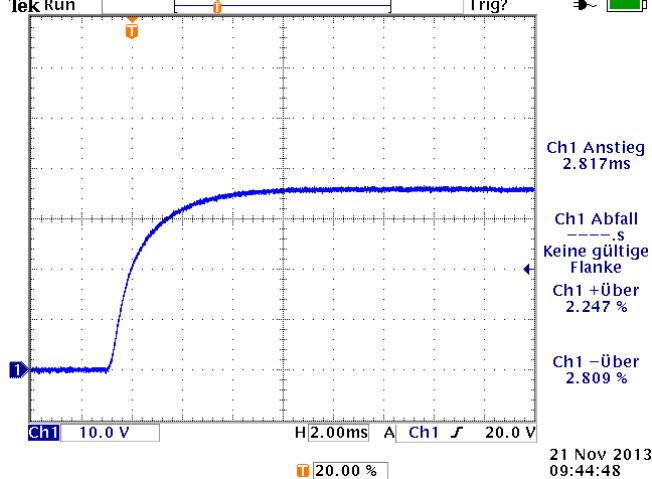
Measured rise-time 16.56μs

Measured fall-time 17.06μs

Comparison measurement 4:

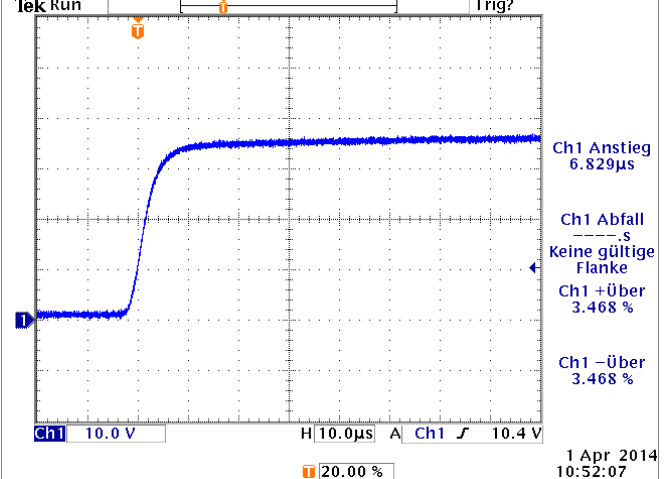
Abrupt voltage change from 0V to 36V with a 10Ω load connected

Minor proper solution with 1000VA output power



Measured rise-time 2.817ms

Spitzenberger & Spies PAS1000/GN/Kfz

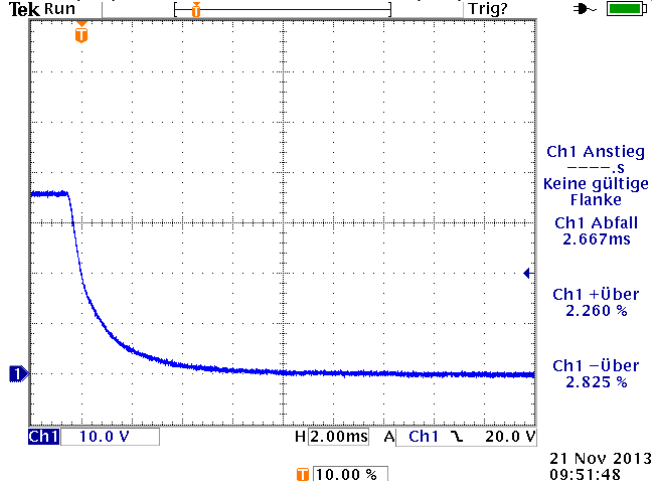


Measured rise-time 6.829μs

Comparison measurement 5:

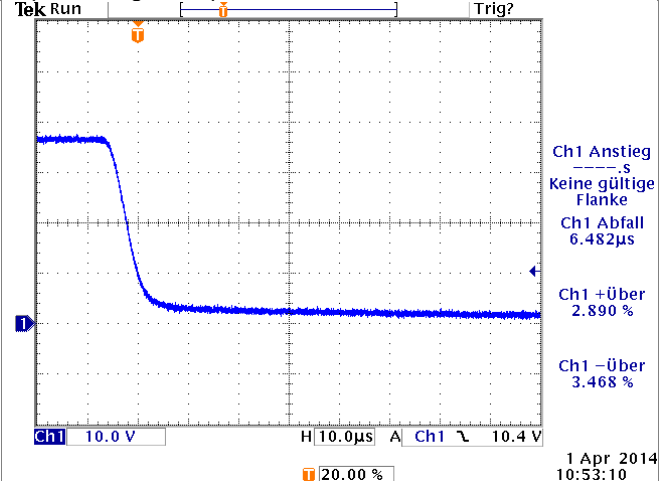
Abrupt voltage change from 36V to 0V with a 10Ω load connected

Minor proper solution with 1000VA output power



Measured fall-time 2.667ms

Spitzenberger & Spies PAS1000/GN/Kfz

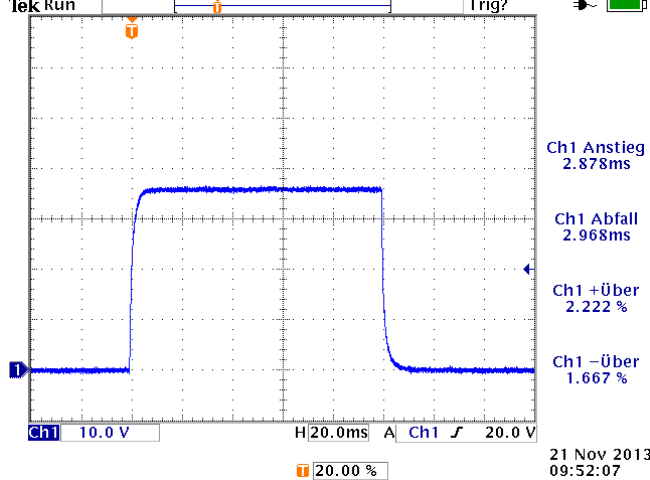


Measured fall-time 6.482μs

Comparison measurement 6:

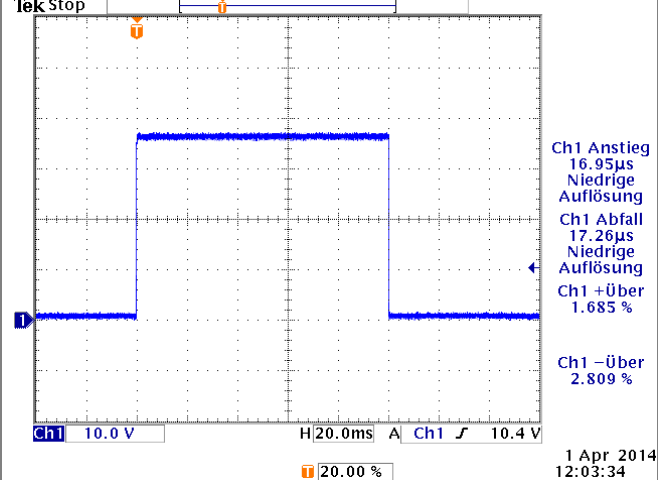
Abrupt voltage change from 0V to 36V and back to 0V with a 10Ω load connected at a time resolution of 20ms/DIV

Minor proper solution with 1000VA output power



Measured rise-time 2.878ms
Measured fall-time 2.968ms

Spitzenberger & Spies PAS1000/GN/Kfz

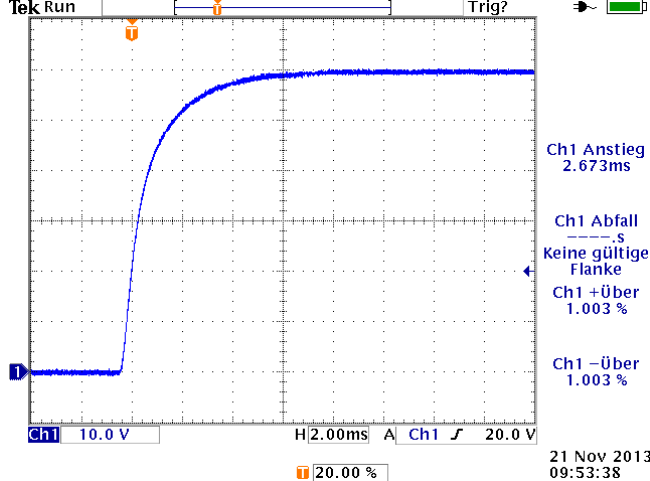


Measured rise-time 16.95μs
Measured fall-time 17.26μs

Comparison measurement 7:

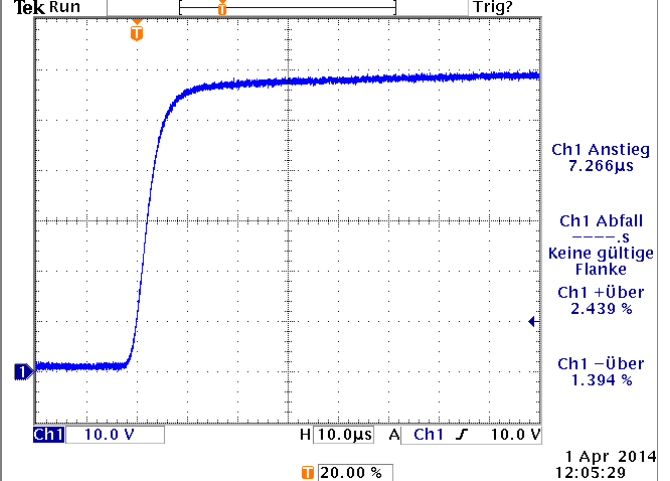
Abrupt voltage change from 0V to 59.3V/60V with a 10Ω load connected (the minor proper solutions has a maximum voltage of 59.3V)

Minor proper solution with 1000VA output power



Measured rise-time 2.673ms

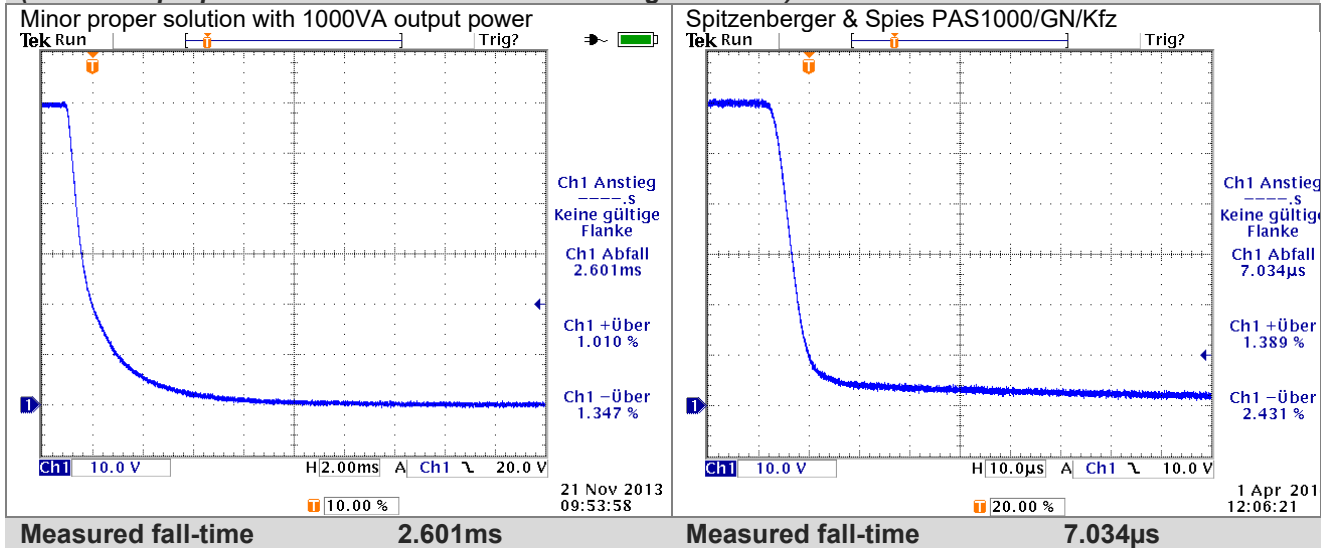
Spitzenberger & Spies PAS1000/GN/Kfz



Measured rise-time 7.266μs

Comparison measurement 8:

**Abrupt voltage change from 59.3V/60V to 0V with a 10Ω load connected
(the minor proper solutions has a maximum voltage of 59.3V)**



Comparison measurement 9:

**Abrupt voltage change from 0V to 59.3/60V and back to 0V with a 10Ω load connected
(the minor proper solutions has a maximum voltage of 59.3V)
at a time resolution of 20ms/DIV**

