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The performance of a prototype sealed-off triggered vacuum switch

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A triggered vacuum switch (TVS) is widely used as a closing switch in the field of high pulsed power systems. A designed final sealed-off TVS is aimed to operate at maximum voltage of 20 kV with maximum current of 150 kA, a lifetime more than 1000 shots. Before we reach the final goals, a sealed-off prototype with Cu electrodes is fabricated to recognize a full producing process. This prototype is electrically tested in the 300 kJ test system. The preliminary tested results shows the prototype is operated at voltage of 17 kV with current of 84 kA for more than 100 shots. The maximum current is reached at 120 kA with a hold-off voltage of 20 kV. In the outlook, we will perform further experiments with the prototype TVS to get better understand and performance. After that we will use CuCr electrode instead of Cu one including upgraded triggering system in order to achieve the final goals.

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